

Chilton's MOTOR AGE

OCTOBER 1953

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DETROIT



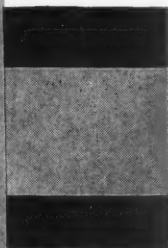
In this Issue:

See the First of the '54 Cars

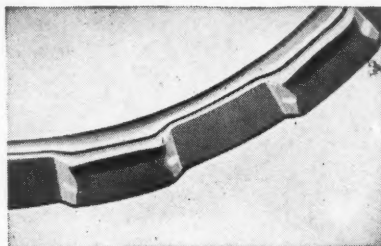
...but oh so Gentle!

Light on Oil-Pumping, Gentle on Cylinder Walls

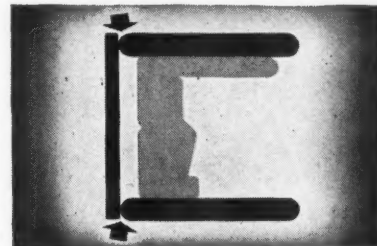
Sets for All Passenger Cars—Hastings gives you both a regular and an oil control ring set for all popular passenger cars—*Motor Engineered* around the latest oil control ring for each make and type of engine, for each engine replacement need, for all replacement service: re-bore, re-ring and re-sleeve.



Vent's two wall-
ings have rounded
hairline contact
minimum.



Gentle because the Steel-Vent spacer has extra wide vents that let oil flow through freely for extra cylinder wall lubrication.



Gentle because Steel-Vent's flexible, low-tension innerspring works only against the steel sections—holds them on the cylinder wall with soft pressure.



GET THIS ATTRACTIVE 6 PIECE SALAD SET

AS A

Gift!



WITH EITHER OF THESE PERMATEX DEALS

**SPECIAL OFFER
No. 242**



Consists of
ONE CASE (12 QUARTS)
**PERMATEX HEAVY DUTY
LIQUID RADIATOR CLEANER**

12, 1-Qt. Bottles @ \$1.50	\$18.00
6 Pc. Salad Set	FREE
	\$18.00
Dealer Discount 40%	7.20
Dealer Net	\$10.80

NOT A PENNY
EXTRA FOR THE
LUSTRO-WARE
SALAD SET

**SPECIAL OFFER
No. 241**



Consists of
ONE CASE (36 HALF-PINTS)
**PERMATEX
LIQUID RADIATOR CEMENT**

36, ½ Pt. Cans @ \$.65	\$23.40
6 Pc. Salad Set	FREE
	\$23.40
Dealer Discount 40%	9.36
Dealer Net	\$14.04

LUSTRO-WARE SALAD SET

1 11-inch mixing bowl; 4 serving bowls; matching salad tongs. Beautiful plastic. Practically unbreakable. Hottest faucet water will not harm it.

Here's a deal you won't want to pass up. Stock up with these ever-dependable, sure-working Permatex products — and get yourself a grand gift. Each case purchase entitles you to a beautiful salad set. Get several. They're always useful.

Permatex products are carried by all leading wholesalers. Ask your wholesaler's salesman for these splendid offers. Good for limited time only.

These Permatex products are made to do a professional job. They'll save you time and make your customers completely happy.

Permatex Heavy Duty Radiator Cleaner quickly dissolves rust, scale and lime and quickly restores normal circulation on the toughest jobs.

Permatex Liquid Radiator Cement effectively stops the leaks that often show up after rust and scale are cleaned out. It repairs leaks in radiator core, water jacket, pump and pipe connections, and will not clog the circulation. Stops anti-freeze seepage.

PERMATEX COMPANY, INC., Brooklyn 35, N.Y.

MORE THAN 50 CHEMICAL PRODUCTS FOR BETTER AUTOMOTIVE MAINTENANCE



For
**REPAIR • INSTALLATION
ASSEMBLY • INSPECTION**

THOUSANDS OF USES—Models with various inch-pound and foot-pound capacities, with different drive sizes, and with ratchet or plain head, handle practically all torquing jobs. Wherever used, the super-fast PROTO Torquer pays for itself quickly in time saved.

BIG NEWS!!

**Both Inch-Pound and
Foot-Pound Models of
Amazing PROTO Torquer
Now Available!**

Announced in January! Over 30,000 bought by March 31!! That's the whirlwind success story of the sensational PROTO torque-limiting wrench. So enthusiastic was the acceptance of the foot-pound models that production efforts were tripped to speed the addition of inch-pound models. Now both kinds are available. And that means all types of industries and mechanics can buy the Torquer they prefer. You get the same time, temper and money-saving advantages, plus closer unerring readings in the inch-pound models. Buy the Torquer of your choice from your PROTO dealer today! Send 10¢ for 68-page catalog of entire line to

PROTO TOOL COMPANY
22267 Santa Fe Ave., Los Angeles 54, Calif.



Fastest Torque Wrench in the World

- ★ Automatic Torque-Limiting Release
- ★ Pull-to Final Torque without Hesitation
- ★ NO Dials, Scales, Pointers or Other Projecting Gadgets to Watch for Break!
- ★ Reversible Ratchet Head Type Saves Time

More Big Features

- ★ Can be Used in Dark, Noisy and "Blind" Locations
- ★ Eliminates Human Errors That Occur with Indicating Types
- ★ Enclosed Precision Spring and Micrometer-Type Adjustment for Extreme Accuracy
- ★ All-Steel Trouble-Free Construction
- ★ Light in Weight and Easy to Use

PROTO TOOLS



PROTO means PROfessional TOols

Eastern Factory—Jamestown, N.Y. Canadian Factory—London, Ont.

Chilton's MOTOR AGE

WITH WHICH IS COMBINED AUTOMOBILE TRADE JOURNAL

Reg. U. S. Pat. Off.

For THE AUTOMOTIVE SERVICE INDUSTRY

LXXII, No. 11

October, 1953

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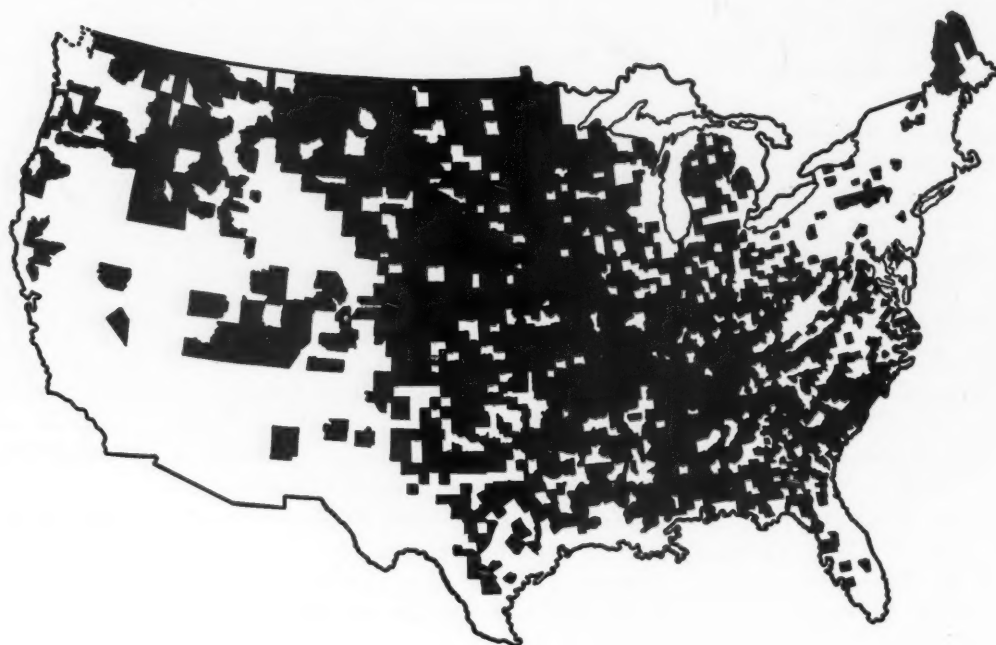
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Where on this map is your business located ?



The shaded areas mark the 1,908 counties—out of the 3,071 U. S. total—where Country Gentleman carries advertising into more homes than Life magazine!

In fact, in nearly 2 out of 3 U. S. counties, Country Gentleman has more circulation than *any* weekly, women's or home service magazine!

Throughout the *rural* portions of all the *other*

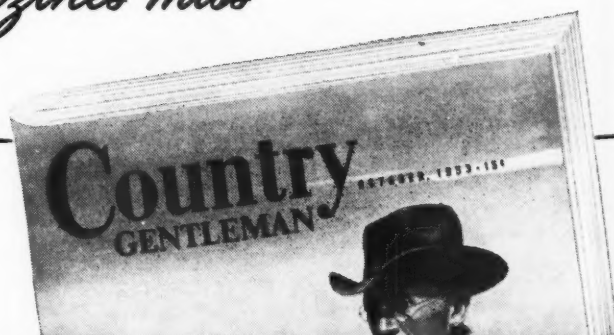
counties—wherever there is good farming and good country living—your best rural customers are getting buying ideas from advertising in Country Gentleman.

IT MEANS THIS TO YOU: When a manufacturer says "It's advertised in Country Gentleman," he is giving you powerful selling support in a lot of homes other magazines miss—right in your own local trading area!

*Sells your best rural customers...
the customers other magazines miss*

CIRCULATION NOW OVER 2,550,000

A CURTIS PUBLICATION



Chilton's MOTOR AGE, OCTOBER, 1953

MOOG 241 CHROME PISTON RINGS ARE BEST.....



for "THAT LITTLE OLD FAMILY CAR"

To be sure, there are times when you will want to use full chrome sets for heavy duty jobs because of the heat factors, which cause fusion and scoring. But for the "little old family car" —and there are millions of them—the flexible Moog 241 Chrome Piston Ring Set gets the job done right. Where cylinders are tapered or out-of-round, it takes a ring flexible enough and made of a material that will seat and conform to the shape of the cylinder wall.

The Moog 241 Chrome Set gives you the benefit of a cast iron top ring for fast seating and the chrome segments on the oil ring for long life. This makes the owner of the family car happy and economically satisfied. *Moog has Both* — Regular or Chrome. Ask your Moog Distributor for his recommendation.

MOOG INDUSTRIES, INC., St. Louis 14, Mo.

Manufacturers of 5 Great Leader Lines

COIL ACTION PARTS • LEAF SPRINGS • CHASSIS PARTS • COIL SPRINGS • PISTON RINGS

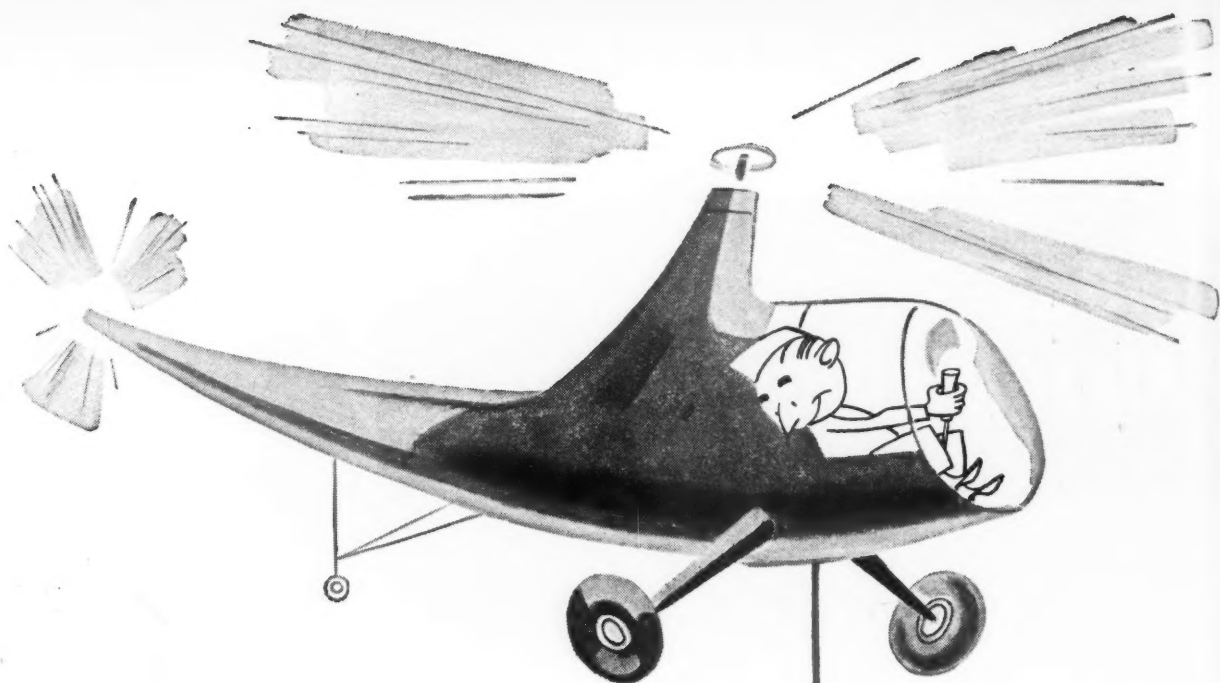
Chilton's MOTOR AGE, OCTOBER, 1953

MOOG 241
chrome
PISTON RINGS



©
1953 M. I. I.





The Line YOU Depend on is Important, too!

For a **COMPLETE** bearing line
... depend on **FEDERAL-MOGUL**



You've seen a lot of changes in engines . . . in size, speed, compression, horsepower . . . and in engine reconditioning methods. One thing doesn't change—the dependability of the Federal-Mogul bearing line. *Always up-to-the-minute, always complete, it has been the mechanic's dependable source of supply for almost 30 years.* Whatever your needs are today—or 10 years from now—you can depend on Federal-Mogul to provide a complete line of top-quality bearings, bushings and all related parts you need to do a top-quality job of engine reconditioning! **ASK YOUR FEDERAL-MOGUL JOBBER.**

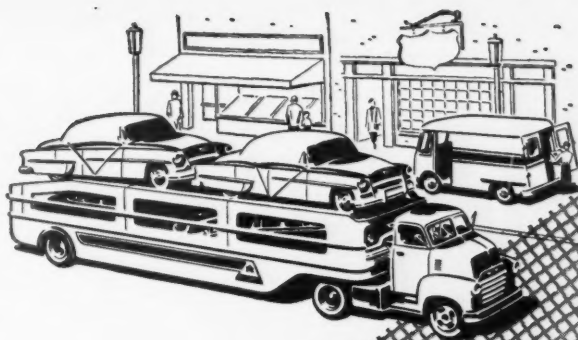
Federal-Mogul Service

Division of Federal-Mogul Corporation
DETROIT 13, MICHIGAN



Chilton's MOTOR AGE, OCTOBER, 1953

Delco-Remy Universal Generators



D.C. GENERATOR

**SERVE A BIG MARKET
WITH A SMALL STOCK
OF THESE
ORIGINAL-EQUIPMENT
QUALITY UNITS**

Millions of cars—hundreds of models of many different makes—are equipped with Delco-Remy electrical systems. To permit you to serve this great market with a small inventory, Delco-Remy has designed a special series of "universal" generators. Each of these models serves many original equipment applications—all are built to original equipment standards of quality . . . they're *right for the job!*

These universal generators maintain the original balance in Delco-Remy electrical systems . . . prolong the life of other electrical units and hold original performance levels. Delco-Remy universal generators are available everywhere. See your nearest United Motors wholesaler for further information.

A GENERAL MOTORS PRODUCT  A UNITED MOTORS LINE
DISTRIBUTED BY WHOLESALERS EVERYWHERE

DELCO-REMY

Division, General Motors Corporation
Anderson, Indiana

WHEREVER WHEELS TURN OR PROPELLERS SPIN



Bart Sayer

OWNER
BART SAYER COMPANY
SAN DIEGO, CALIFORNIA

YOU' WAY

"MY HAT's off to Auto-Lite for introducing the premium profit 'Sta-ful'," says Bart Sayer.

"Our customers tell us over and over that half their selling job is done, thanks to Auto-Lite's original equipment replacement market and well-planned national television, radio,

magazine and farm paper advertising. With 'Operator 25' they get a bonus promotion that pays extra dividends.

"My accounts all agree that the Auto-Lite people really came up with the truth when they say . . . 'You'RE ALWAYS RIGHT WITH AUTO-LITE'."

AUTO-LITE BATTERIES



WAYS RIGHT WITH AUTO-LITE

NO MATTER WHAT THE FILTER NEED
YOU MAKE THE SALE
WITH *wix*

*WEARMITES are "engine termites" — the Grit, Dirt and Tarry Sludge that multiply in dirty oil and combine to destroy car, truck and tractor engines.



PROFIT BY THE COMPLETE COVERAGE OF

wix

ENGINEERED FILTRATION

To boost your sales and profits, WIX Engineered Filtration provides just the right Oil Filter Cartridge for every customer and every service need. . . Cartridges that take out all the *WEARMITES without removing a speck of valuable oil additives.

There are three exclusive WIX Filtrants—WIXITE, the unique, Resilient Density Filtrant for by-pass systems, WIX-KNIT and the sensational new POROSITE for full-flow systems. There are Sock and Can Type Cartridges for trucks, passenger cars and tractors, Screw-in Can Types for special tractor installations . . . types and sizes for every popular filter-equipped engine.

You make sales when you give customers what they want, and that's easy with WIX. Ask your WIX Wholesaler about the all-inclusive WIX Line of Oil Filters and Cartridges today. It means profits for you!



WIX WF-110-N FILTER FOR CHEVROLET

WIX No. WF-110-N (Revised) is full Military Standard Jr. size. Takes the large capacity WIX PC-100 Cartridge. Comes complete with all fittings for QUICK, easy installation on all models, 1949 to 1953 inclusive, including those with power steering. Does not require removal of air cleaner for Cartridge change. See your Jobber about this full profit opportunity for Chevrolet Cars and Trucks. Other WIX Filter installations and conversion Kits are available for many other cars.



wix

TRADEMARK REG.



OIL FILTERS CARTRIDGES
WIX CORPORATION • GASTONIA, N. C.
IN CANADA: WIX ACCESSORIES CORPORATION LTD., TORONTO, ONT.



1. When a customer shells out for a car today, he expects full value for his investment . . .



2. And if he doesn't get top performance, he's going to be roaring mad about it.



3. But if you want to keep him happy as a pup . . .



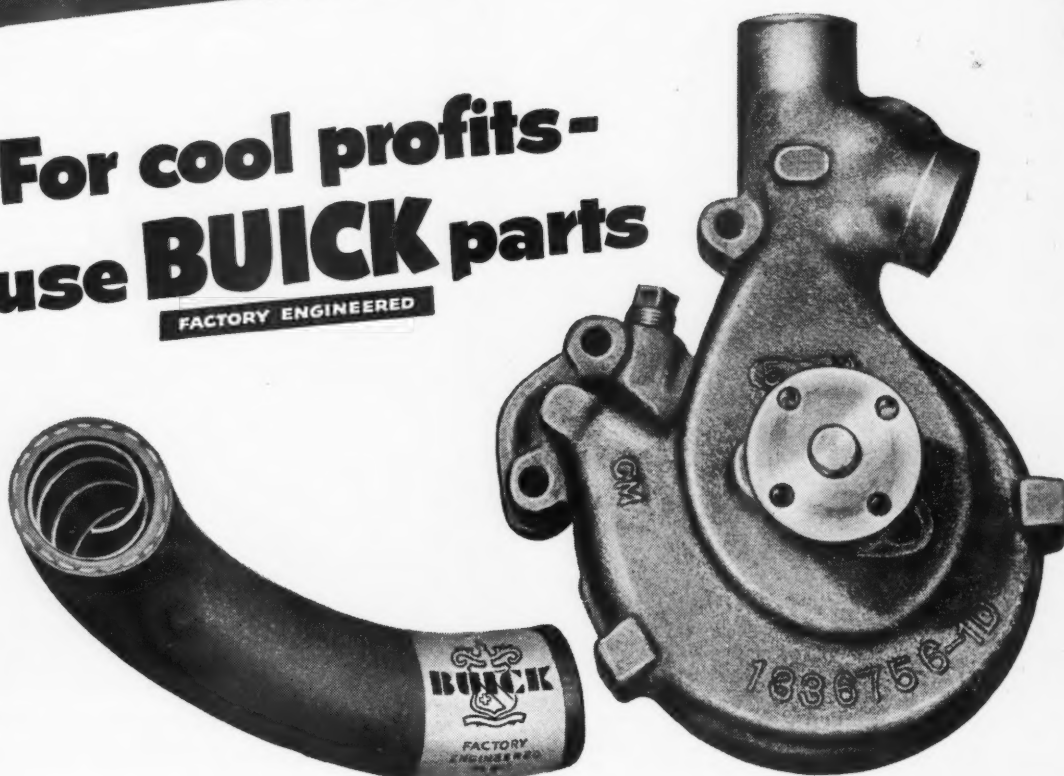
4. The wise thing to do is tell him to use "Ethyl" gasoline and get all the *power* he paid for. (Of course, the timing should be set for "Ethyl" gasoline.)



© 1953, Ethyl Corporation, New York 17, N. Y.

Chilton's MOTOR AGE, OCTOBER, 1953

**For cool profits—
use BUICK parts**
FACTORY ENGINEERED



IT'S THE TIME — check cooling systems for winter. Watch for tired, mushy hoses, leaking connections, bad thermostats. *Your customers rely on you to advise them what they need.*

IT'S A BETTER DEAL for you and your Buick owners to use only Factory Engineered Buick Parts. Full discount to you—full satisfaction to your customers.

BETTER WORK WITH

FACTORY ENGINEERED PARTS

ENGINEER APPROVED ACCESSORIES



FACTORY ENGINEERED PARTS

SEE YOUR BUICK DEALER

New Britain Tools that Make **HARD** Money and **EASY** Work for Mechanics !

Here's the mechanic's Tool Line with everything you want . . . rugged power — sturdy, compact strength — handsome design — and the long, dependable service-life that's *easy* on your pocketbook.

NEW BRITAIN Hand Tools are designed *by* mechanics — *for* mechanics. Give your hands the **POWER** to lick the toughest nut-turning problems. Finest alloy steel, carefully heat treated. Perfect balance and comfortable grips. Precision-made for perfect, no-slip fit on the nut. And what's more, the complete NEW BRITAIN Line provides you with the *right* Tool for every job.

With NEW BRITAIN, it's "More Power To You!" . . . and more Thrift, too! Ask your Jobber about these famous NEW BRITAIN Tools today!

SHOWN ON LEFT

- P-360 Ring Compressor for Truck-Tractor Engines
- P-212 Ring Compressor for Briggs & Stratton Motors
- R-173 Universal Cylinder Ridge Reamer Set
- P-100 Universal Hub Puller

SHOWN ON RIGHT

- NB-43 Reversible Ratchet
- NB-50 Flex Reversible Ratchet
- NS-12 Ratchet Adapter
- SE-1 Stud Extractor
- NFV-618 V-8 Connecting Rod Socket
- NBD-14 Extra Deep 12-point Socket
- NB-1210 Thin-Wall 12-point Socket
- NB-808 Thin-Wall 8-point Socket

New Britain

GREATER STRENGTH • BETTER FIT

THE NEW BRITAIN MACHINE CO. • NEW BRITAIN, CONN.

HAND TOOLS

NEW PLAN BOOSTS BODY SHOP PROFITS UP TO 40% OR MORE!

Also helps sales of both new and used cars

Blackhawk's new plan and new equipment for body departments is providing *double* benefits to dealers. First, it increases body shop profits, makes for better work and lowers costs on used car reconditioning. Second, this higher profit operation in body departments means more overhead absorption which, along with lower reconditioning costs, permits better offers on used cars, yet more profits on trade-ins.

Merchandising aids for body shop included in plan



Bench-Rack creates a work center for every body man

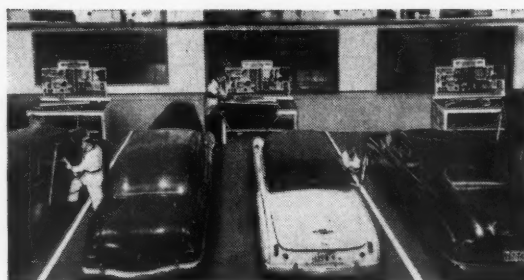
Heart of the revolutionary Blackhawk Plan for body shops is the "Bench-Rack" system. Combining a work bench and a holding rack, each "Bench-Rack" includes all Bantam and 10-ton general-purpose "Porto-Power" equipment necessary for rough-out work, *on* or *off* the car. Many dramatic new "Porto-Power" time-saving attachments are introduced to help produce up to 40% more labor dollars per man. Your Blackhawk jobber has a special presentation for you on "Bench-Rack" and the big Blackhawk "Dollars-from-Damage" Plan. Ask him for it TODAY or write us.



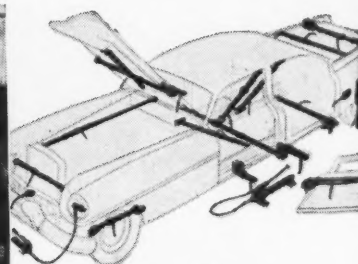
FOR THE FIRST TIME, a sign is available (for nation-wide public recognition) to let customers know you have a body department. This attractive three-color metal sign can be mounted inside or outdoors.



DIRECT MAIL AND NEWSPAPER MATS — these are part of the big Blackhawk package for body shop owners to use in getting more "Dollars from Damage." Also available: new shop manual and colorful shop posters illustrating basic "Porto-Power" set-ups and money-making applications.



ELIMINATES NEEDLESS WALKING, BORROWING, WAITING — And that means cost savings that make your selling job easy! "Bench-Rack" organizes the shop — each man has everything needed for work in his own stall. Body shops know this helps maintain schedules.



THIS PLAN, with "Bench-Rack" equipment, offers Blackhawk "Porto-Power" set-ups absolutely essential to profitably handle all 20 major body sections.

A Product of Blackhawk Mfg. Company, Dept. P-6103, Milwaukee 1, Wis.

Only **BLACKHAWK** makes *Porto-Power*

Give your customers the **EXTRA CONFIDENCE** of Grey-Rock Balanced Brakes

DISTINCTIVE WOVEN-MOLDED COMBINATIONS

Balanced Braksets for passenger cars
Balanced Trucksets for light trucks

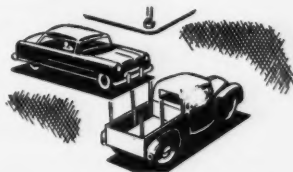
Grey-Rock combines special woven linings with molded linings to meet the specially severe brake requirements of certain makes and models. These woven-molded combinations provide brake action *far better* than can be achieved with molded linings alone. This is a distinctive Grey-Rock feature!

CAR AND TRUCK OWNERS KNOW THE GREY-ROCK NAME



When customers see you use Grey-Rock, they know they are sure of getting a first-rate job. They know the Grey-Rock name...a name backed by year after year of consistent national advertising. And they know that Grey-Rock balanced brakes mean brake performance they can trust!

SAFE STOPS, GREATER MILEAGE



Even in the same brake, different shoes do different work. It takes a balanced combination of different brake linings to equalize wear and to provide sure, safe stops for many thousands of miles. Balance is not just a matter of high and low friction linings; it is the result of using many different linings in combinations properly engineered for each make and model. This *balance* principle, pioneered by Grey-Rock more than 20 years ago, reduces adjustments and comebacks . . . assures a better profit on each job.

THIS TAG IS YOUR ADVERTISING



This tag, packed with every Grey-Rock Balanced Brakset, is ready for you to snap on the dash of your customer's car. It tells how your expert workmanship combines with Grey-Rock *balance* to deliver a better brake job. It marks your shop as headquarters for brake service!

Consistently advertised in

POST and **Country Gentleman**

See your Grey-Rock jobber for
**FACTORY-BONDED
SHOE EXCHANGE**

Only **Grey-Rock** *makes*
BALANCED BRAKSET LININGS

RM

GREY-ROCK DIVISION of Raybestos-Manhattan, Inc., **MANHEIM, PA.**
RAYBESTOS-MANHATTAN, INC., Manufacturers of Brake Linings • Brake Blocks • Clutch Facings
Fan Belts • Radiator Hose • Industrial Rubber Products • Rubber Covered Equipment • Asbestos Textiles
Teflon Products • Packings • Sintered Metal Products • Abrasive and Diamond Wheels • Bowling Balls

**Only
Willard gives you
Climate
Control**

**...the most powerful sales-
building feature ever
offered to storage
battery dealers!**



This key operates Climate Control...
the sensational feature which makes the

Willard

Weathermaster

TWO GREAT BATTERIES IN ONE

**1. A more powerful
cold weather
battery**

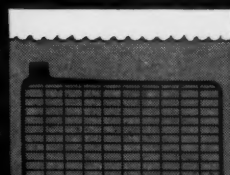


Low water level increases acid gravity... steps up strength of electrolyte... gives 20% extra cranking power for quick, positive starting even at sub-zero temperatures.

KEY-OPERATED CLIMATE CONTROL



**2. A longer-lasting
hot weather
battery**



High water level reduces acid gravity... keeps battery cooler. Less possibility of damage from overcharging... less self-discharge due to high temperatures. Needs water only twice a year in normal use.

TURN THE KEY



... ADD WATER



CLIMATE CONTROL DOES THE REST AUTOMATICALLY

**The Willard Weathermaster is NEW...
ALL-NEW...all the way through**

NEW ONE-PIECE TOP—Stronger... cleaner... greater protection against dangerous shorts.

NEW MECHANICAL SEPARATORS—Provide positive protection against internal shorts and possible mechanical failure.

NEW METALEX GRIDS—100% greater protection against overcharging—the No. 1 battery killer. Assure longer battery life.

NEW STRONGER CASE—Has twice the strength of previously-used battery-case materials.

NEW STEPPED-UP POWER—20% greater cold weather cranking power at winter setting.

PLUS WILLARD "SAFETY-FILL"—Safest, simplest protection against overfilling which can cause dangerous corrosion.

WILLARD STORAGE BATTERY COMPANY

Factories in: Cleveland • Los Angeles • Dallas • Memphis • Portland • Allentown • Toronto

**REGARDLESS OF THE LINE
YOU'RE NOW HANDLING,
ADD WILLARD WEATHER-
MASTER TO MEET YOUR
CUSTOMERS' DEMAND**

*Call Your
WILLARD DISTRIBUTOR NOW!*

NOW IS THE TIME TO
"Sell 'em at the lift!"



... TIME TO SELL 'EM **MAREMONT**

The line with the right design ... for every engine!

**USE THIS INSPECTION
 REMINDER STREAMER...**



to help you
 "Sell 'em at the Lift."
 Write for yours today.

Nothing takes a beating like a muffler ... and more cars than ever are ready for *new* mufflers, tail and exhaust pipes. Sell 'em Maremont ... with new design advancements to meet the demands of higher compression engines. Yes, *now* is the time to join Maremont's *successful* sales program ... "Sell 'em at the Lift!" Whenever you're servicing a vehicle, *check* the entire exhaust system, *spot* the reasons for replacement—then you'll find it's easy to "Sell 'em at the Lift!"

**... AND MAREMONT EQUIPS YOU
 TO GET THE BUSINESS!**

In addition to the *right* design and *right* merchandising, Maremont makes available *muffler and tail pipe display racks* ... and the *muffler removal kit* for easy, 30-minute muffler replacement. Ask your Maremont jobber salesmen for them!



MAREMONT MUFFLERS

The right design ... for every engine!

MAREMONT AUTOMOTIVE PRODUCTS, INC. Chicago 8, Illinois

MR. DEALER:

Here's Why You Make More Money Handling Du Pont "ZERONE" and "ZEREX" Anti-Freezes

REG. U.S. PAT. OFF.

REG. U.S. PAT. OFF.

"ZERONE"-"ZEREX" DEALERS HAVE ALL THESE IMPORTANT SALES ADVANTAGES:

1. AMERICA'S LARGEST-SELLING ANTI-FREEZE TEAM. "Zerone" and "Zerex" are sold nationally, promoted nationally.

2. TOP PROMOTIONAL SUPPORT. Du Pont's "Anti-Freeze Week" has been called by dealers "the greatest merchandising idea in the anti-freeze business."

3. ATTRACTIVE, CERTAIN PROFITS. "Zerone" and "Zerex" are fair-traded in states having Fair Trade Laws.

4. SOUND MARKETING POLICIES. Consumers are directed to you for complete winter car service.

5. FREEDOM FROM SERVICE COMPLAINTS. Both Du Pont "Zerone" and "Zerex" anti-freezes contain a chemical rust inhibitor that never separates in solution, does not contribute to radiator clogging. They give complete winter-long anti-freeze protection.

6. YOUR CUSTOMERS ARE PRE-SOLD on the quality and dependability of Du Pont products—this means faster sales, more profits for you.



DU PONT "ZERONE"
—America's economy
anti-freeze buy



DU PONT "ZEREX"
—the one-shot
winter-long anti-freeze



REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING... THROUGH CHEMISTRY

AND HERE'S HOW DU PONT'S STAND AGAINST EMPLOYEE SALES HELPS YOU!

Our sales policies are specific in opposing any practice that takes legitimate profits away from the dealer. We've built our consumer business on the sale of "Zerone" and "Zerex" through regular dealer outlets. We and our wholesalers will not "pick the pockets" of the dealers on whom we depend, by condoning the practice of selling industrial outlets who resell "Zerone" and "Zerex" at wholesale prices to their employees. Our policy on wholesale sales to employees—our own or others—may be summed up in these words—Buy It From Your Dealer.

• • •

Be sure you warn your customers to drain out old anti-freeze—not to use it more than one season. Some people keep the same anti-freeze in their cooling system season after season. The U.S. Bureau of Standards warns that any anti-freeze can turn acid through use, cause damage to the motor. So do your customers a real service—for their protection remind them not to re-use last winter's anti-freeze.

TO THE TOP

R. A. STRANAHAN, President
F. D. STRANAHAN, Treasurer

CABLE ADDRESS
"CHAMPION"

CHAMPION SPARK PLUG COMPANY

FELTHAM, ENGLAND PARIS, FRANCE WINDSOR, CANADA

October 1, 1953

Dear Champion Dealer:

ANNOUNCING— THE CHAMPION NOZZLE GRIP GUARD (Pat. applied for)

A tremendous customer good will builder for every Champion Service Station Dealer.
Here is what it does for you:

- A. It protects your customer's car against scratches and nicks.
- B. Made of gas-resistant plastic, it prevents hazardous friction sparks.
- C. Reminds the attendant of the constant sales potential for Champion.
- D. Reminds the customer that you stock Champions.

ALL THIS ADDS UP TO BETTER CUSTOMER
RELATIONS, MORE SALES, BIGGER PROFITS
FOR YOU.

Yours truly,

Jim L



DEALERS *IN THE NATION*

YOU WILL BUILD more customer goodwill by providing this greatly appreciated protection!



AVAILABLE ONLY FROM CHAMPION.

Now obtainable for $\frac{3}{4}$ " nozzles only—1" nozzle size after November 1st. Cash with order at the sensational low price of \$1.00 for package of (4) four.

Champion Spark Plug Company, Box 718-MA, Toledo 1, Ohio

Gentlemen: Enclosed herewith \$_____ for _____ sets of four (4) each, Champion Nozzle Grip Guard, to be shipped postpaid as follows:

Name _____ Address _____
City _____ Zone _____ State _____

1 out of every 3 cars in America

AUTO

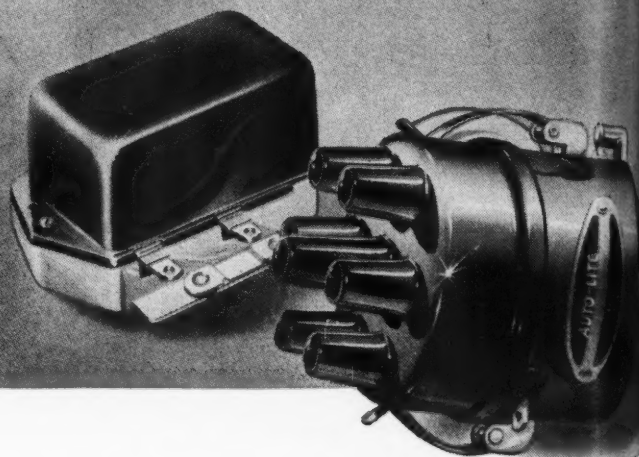


AUTO-LITE WIRE AND CABLE,

in spools and package
sets . . . a standard of quality
for every automotive, marine,
aviation and industrial electrical use.



AUTO-LITE "STA-FUL" BATTERIES need
water only 3 times a year in normal car
use. And they last longer!



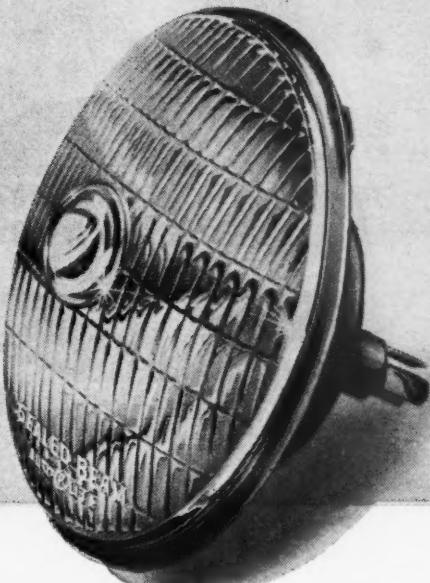
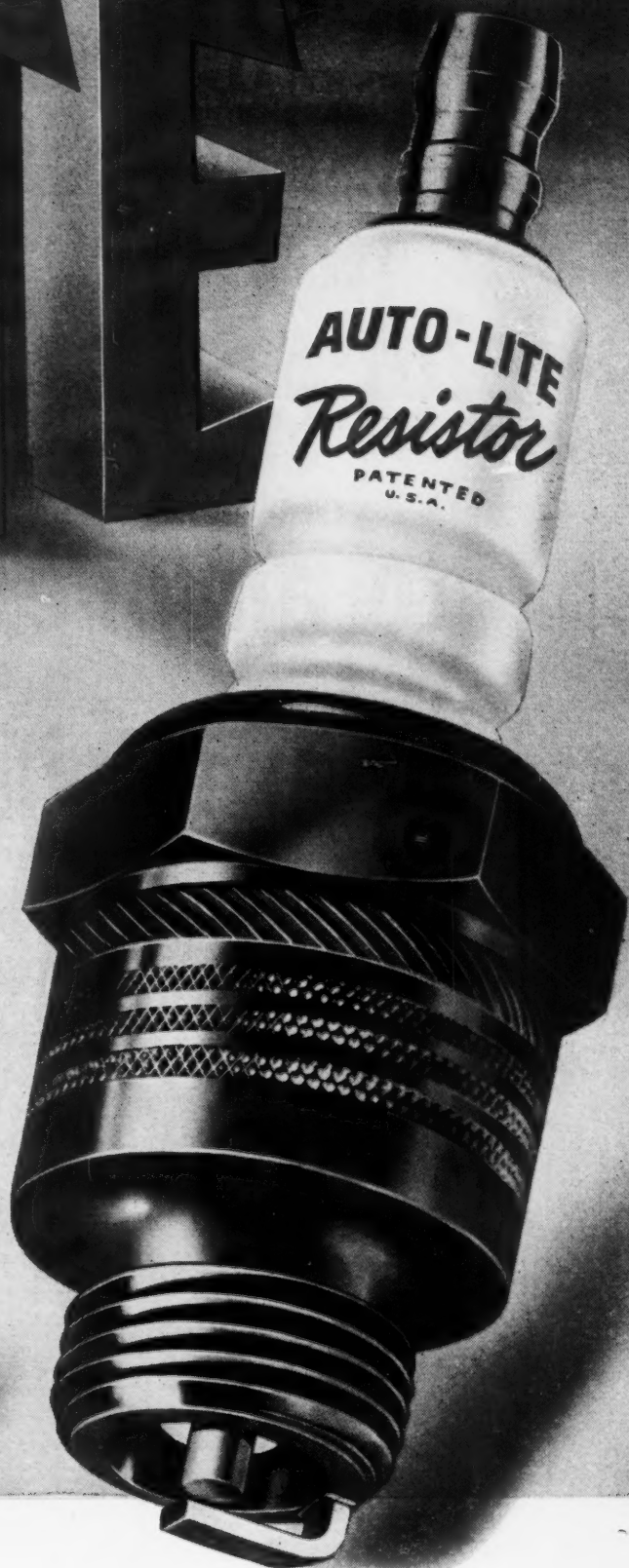
AUTO-LITE ORIGINAL SERVICE PARTS
include generators, voltage regulators, starting motors, dis-
tributors, coils and thousands of electrical and mechanical
component parts engineered for best car performance.

THE ELECTRIC AUTO-LITE COMPANY

America is equipped with

AUTO-LITE

Outstanding quality and performance have made more than 400 Auto-Lite products for cars, trucks, tractors, planes, boats and industry world famous . . . convincing proof, "You're always right with Auto-Lite."



AUTO-LITE BULL'S EYE SEALED BEAM UNITS are designed for safe night driving. They concentrate more light on the road . . . burn even when the lens is cracked or broken.

AUTO-LITE SPARK PLUGS . . . Ignition Engineered to give top performance in your car . . . include a complete line of Resistor, Standard, Transport and Marine types.

**A message of
great importance
to anyone with an
interest in hand tools**



BONNEY FORGE & TOOL WORKS, ALLENTOWN, PENNSYLVANIA

Whether you are a mechanic or an employer of mechanics, Bonney's new tool plan is of special interest to you.

If you are a mechanic, Bonney's new tool plan enables you to get the tools you need when you need them.

If you employ mechanics, Bonney's new tool plan cuts your costs by saving your mechanics' time and eliminating costly interruptions of work.

Send coupon today for details!

BONNEY FORGE & TOOL WORKS
Allentown, Pennsylvania

Gentlemen:

I want to know more about the Bonney Tool Plan.

Name _____

Company _____

Address _____

City _____ State _____

Your Position _____

do you have
any of these

3

false
ideas

about Hydraulic
Brake Fluid?



1 ALL FLUIDS ARE ALIKE

That's FALSE! Inferior fluids contain a cheap alcohol base and boil at temperatures as low as 150°F. Higher boiling points are sometimes achieved at the cost of a lower freezing point or chemical stability.



***2 ALL FLUIDS
ARE EQUALLY SAFE***

That's FALSE! Non-approved fluids can cause dangerous vapor locks, freeze-ups, air-pockets, swelling of rubber parts, rust and corrosion, and gummy residue deposits, and can fail to lubricate system thoroughly or to mix properly with other fluids. Any of these conditions could cause a tragic wreck.



***3 CHEAP FLUID
IS JUST AS GOOD***

That's FALSE! Quality brake fluid is made of the finest ingredients, and is chemically balanced to assure perfect functioning under all driving conditions, and in all seasons. It meets the rigid S.A.E. specifications established for your protection. Cheap fluids can't stand the gaff over the long haul.

 **Wagner**

LOCKHEED HYDRAULIC BRAKE PARTS and FLUID • NoRoL • CoMoX BRAKE LINING • AIR BRAKES



WAGNER LOCKHEED HYDRAULIC BRAKE FLUID

it's chemically balanced... surpasses S.A.E. specifications

Don't be lulled into false security about brake performance. Inferior fluids can easily cause brake failure . . . imperil driver and vehicle, the lives of others, and cause heavy property damage! Don't take chances—Standardize on Wagner Lockheed Hydraulic Brake Fluid. It surpasses standards of S.A.E. (Society of Automotive Engineers). Only two types of Wagner fluid are required to meet ALL service needs. No. 21-B is a late type hydraulic brake fluid originally developed for, and used by, the military in global service. It is a premium quality brake fluid for use in all trucks, buses, and in passenger cars where a heavy-duty type fluid is recommended. It is chemically balanced to withstand the rugged, heavy-duty service that modern, over-the-road service entails. Wagner Lockheed No. 21-B Brake Fluid functions perfectly in all seasons and under all conditions. It will withstand great heat . . . will not cause slushing, freezing, solidifying or crystallizing in sub-zero temperatures. It fully lubricates the brake system without leaving gummy residue deposits . . . does not corrode metal parts nor cause swelling of rubber parts. Mixes perfectly with all other approved fluids. There isn't a safer brake fluid on the market!

No. 21 Fluid is the world-famous fluid that has always been the leader. It, too, is a high-quality brake fluid and is recommended for use in passenger cars operating under normal conditions.

Wagner Lockheed Brake Fluid No. 21 is packaged in handy 12-ounce, quart, gallon, 5-gallon, 30-gallon and 54-gallon containers. No. 21-B comes in the same size containers with the exception of the 12-ounce cans. Remember, you can always depend upon Wagner Quality because Wagner Products are used as original equipment by manufacturers of cars, trucks and buses.

*...the best known
name in brake service*

**JOIN this money-making
FRANCHISED
DEALER PROGRAM NOW...**

It's a money maker for you... It's exclusive with Wagner. You have everything to gain, nothing to lose. Ask your Jobber or write us for copy of AU-607. It gives all the details.

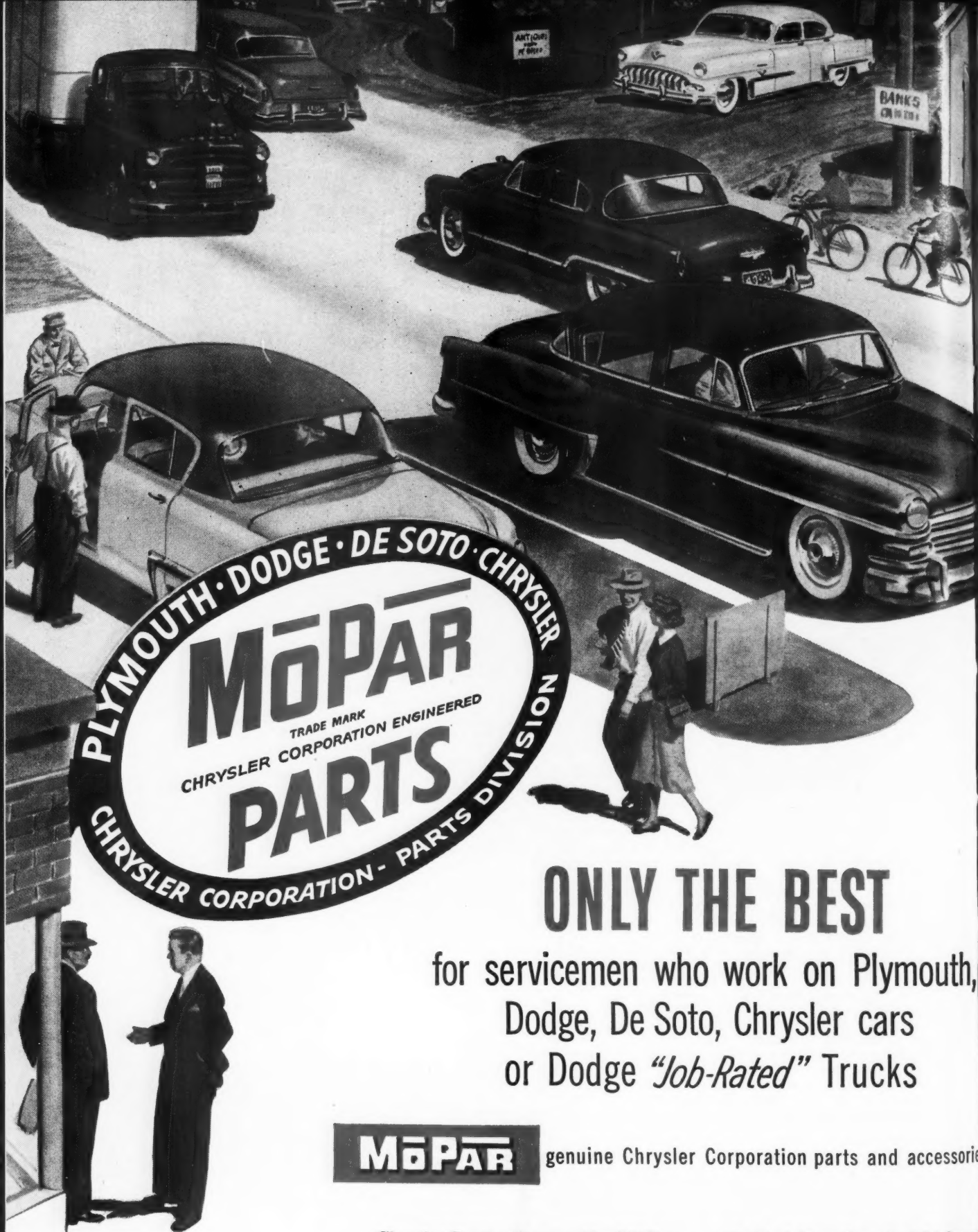
Wagner Electric Corporation
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**FRANCHISED
Wagner
AUTOMOTIVE
BRAKE PRODUCTS
DEALER**

H53-IF

TACHOGRAPHS • ELECTRIC MOTORS • TRANSFORMERS

INDUSTRIAL CRANE BRIDGE BRAKES



CHRYSLER CORPORATION
PARTS DIVISION
DETROIT 31, MICHIGAN

ONLY THE BEST

for servicemen who work on Plymouth,
Dodge, De Soto, Chrysler cars
or Dodge "Job-Rated" Trucks

MOPAR

genuine Chrysler Corporation parts and accessories

Chrysler Corporation provides MoPAR parts to assure you of the best when you service Chrysler Corporation cars or trucks. Only the highest-quality materials and the finest workmanship are good enough for MoPAR—only the best, meeting exactly the same high standards as original parts. MoPAR

parts fit right and work right because they are made right. They perform better, give more satisfaction, because they are engineered *specially* for these cars and trucks. . . . So, to be certain of a quality job, install MoPAR genuine Chrysler Corporation parts and accessories.

It takes all kinds of customers...



...but they all want the best. And when it's bearings, just tell 'em it's *TIMKEN®*!

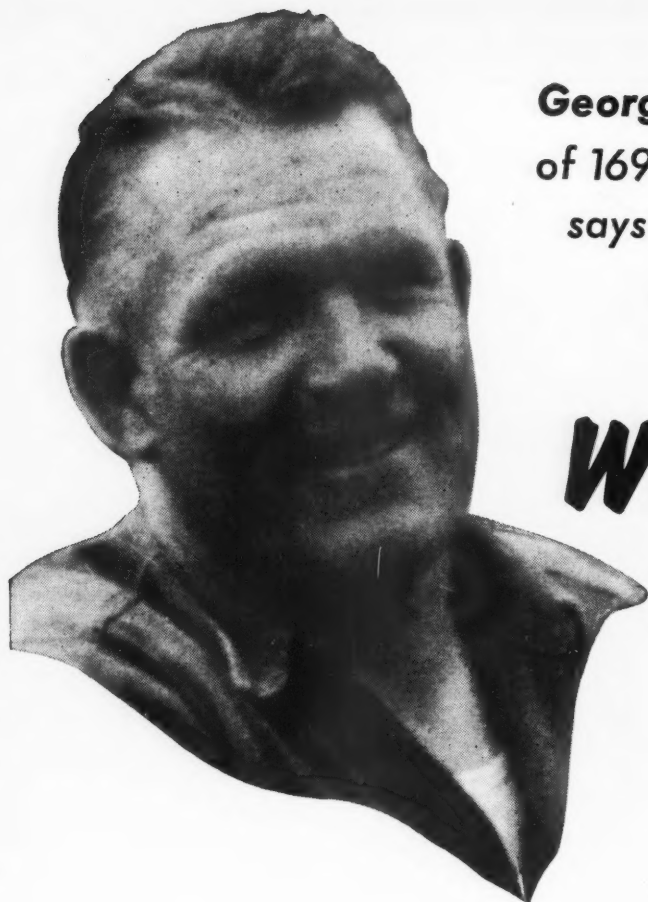
Customers will keep coming back to you when they know you use the best replacement parts. So whenever you install a tapered roller bearing, point out the trade-mark "Timken". It's the best-known name in bearings. The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".

TIMKEN TAPERED ROLLER BEARINGS

TRADE-MARK REG. U. S. PAT. OFF.



NOT JUST A BALL ○ NOT JUST A ROLLER □ THE TIMKEN TAPERED ROLLER ▱ BEARING TAKES RADIAL ⌊ AND THRUST → LOADS OR ANY COMBINATION ⌘



George F. Hamilton,
of 169 Park Avenue, Portland, Maine,
says:

"I Sell WEED CHAINS with Anti-Freeze"

"These two winter products go together like ham and eggs. So I always recommend both to my customers before winter hits. Now last year we had an open winter and I had some chains and anti-freeze left over. But some years we have blizzards before Thanksgiving and this year we could have a lulu. You never know. That's why I like to sell WEED V-Bar tire chains early."

**Don't
S'kid Yourself**

STOPPING ON GLARE ICE AT 20 M. P. H.

.....77 ft.	with Reinforced Tire Chains
Natural Rubber Tires*209 ft.
Winterized Tires.....	188 ft.
Mud-Snow Tires.....	201 ft.

*For stopping or starting on ice or snow, synthetic rubber tires skid or spin 10% to 50% more than natural rubber

(ALL FIGURES IN THIS PANEL ARE QUOTED FROM NATIONAL SAFETY COUNCIL TESTS)

TRACTION ON PACKED SNOW

In pulling power tests on hard-packed snow, conventional natural rubber tires* registered 301 lbs., winterized tires 268 lbs., mud-snow tires 374 lbs., and reinforced tire chains 1120 lbs.

WEED V-BARS

The Tire Chains that Double the Wear and Double the Bite on Ice or Snow...

Yes, and you'll make money if you get your display of WEED chains set up early. You'll have time to show your customers the WEED V-Bars' flaring reinforcements with 288 gripping points that double the bite on ice or snow. Their opposite right-left construction gives two-way grip and balanced traction. So, WEED V-Bars stop

shorter and safer, start quicker, hold straighter and wear longer especially when snug.

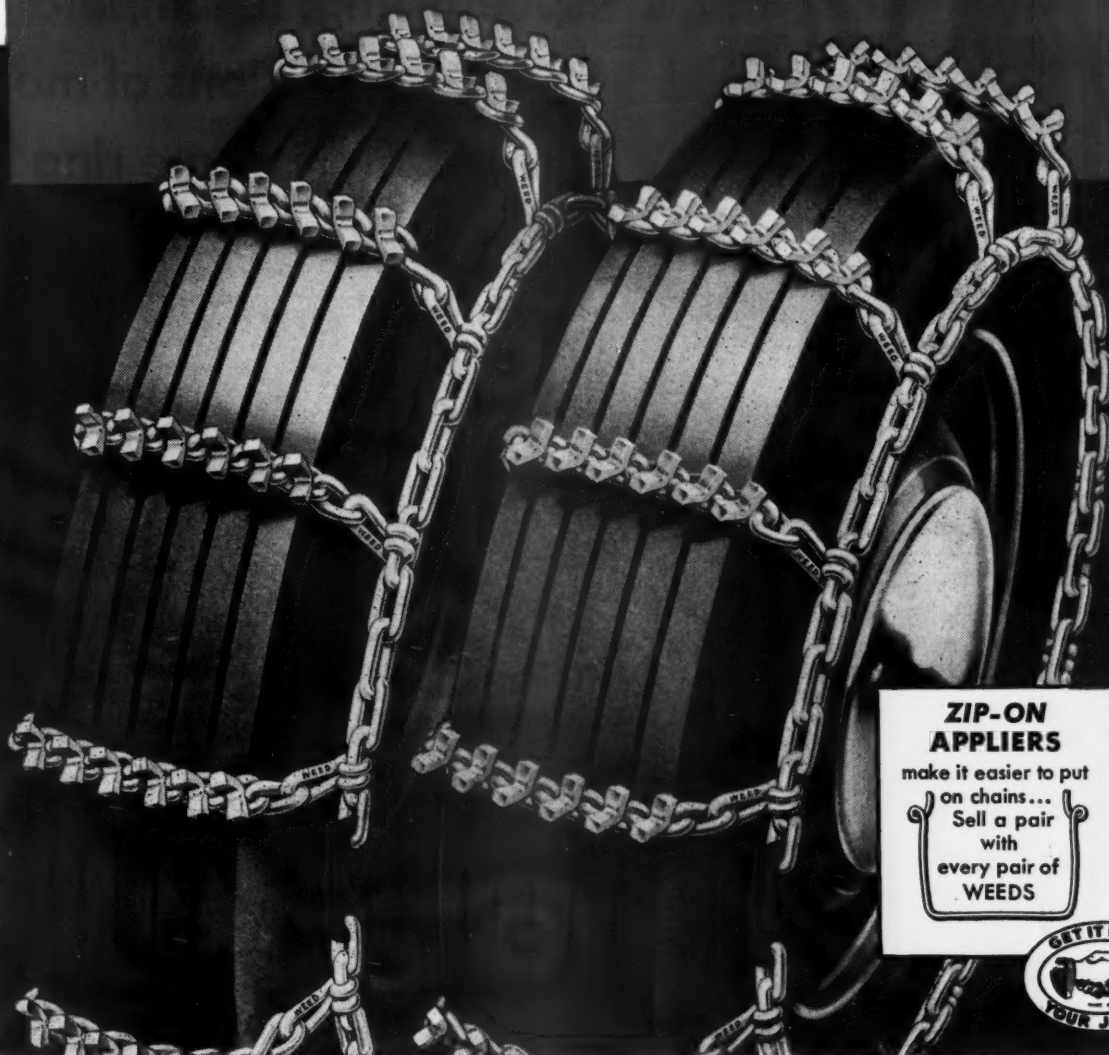
ACCO



American Chain & Cable Company, Inc.
York, Pa. and Bridgeport, Conn.

In Canada: Dominion Chain Company, Ltd.
Niagara Falls, Ont.

Flaring Reinforcements with Right-Left Construction
GIVE DOUBLE GRIP and REDUCE SIDE-SKID



ZIP-ON APPLIERS

make it easier to put
on chains...
Sell a pair
with
every pair of
WEEDS



The question of **CHROME** rings becomes the question of which **CHROME** rings...



Experience has proved that chrome is the best answer to the higher engine speeds, engine temperatures, and compressions of modern cars. Some chrome ring sets are better than others. Best of all are...

Sealed Power KromeX

FULL-FLOW RING SETS

- 1** Top compression ring is chrome-alloy cast iron with **SOLID CHROME** face, factory-lapped to a light-tight finish, with Granosealed sides for flexibility.
- 2** Side rails of MD-50 oil ring have **SOLID CHROME** faces, Granosealed sides for flexibility. Hundreds of thousands of cars have proved this ring best for oil control even in badly tapered and out-of-round bores.
- 3** All rings are beveled or tapered to thread-line contact for quick seating and blow-by control.

SEALED POWER CORPORATION, MUSKEGON, MICHIGAN

Sealed Power Piston Rings

BEST IN NEW CARS! BEST IN OLD CARS!



Newscoop

"I Cover the Detroit Autofront" ..by Len Westrate

INDICATIONS ARE STRONG that General Motors will get into limited production of Hydra-Matic transmissions again at its Riopelle plant in Detroit by the middle of this month or before. These units will be assembled from components farmed out to subcontractors, including GM Divisions. The subcontracting operation is designed to bridge the gap until output can start at Willow Run early in November, with full production of 200 units an hour expected by mid-December.

AIR CONDITIONING WILL BE EXTENDED down into at least one of the Big Three volume lines next year. It may not arrive at new model time but will be ready some time after the first of the year. Progress is being made by automotive engineers in developing a compact combination heater and air conditioner lower in cost than two separate units. One manufacturer expects a unit ready for 1955 models.

TUBELESS TIRES AS STANDARD EQUIPMENT on passenger cars still are some distance away. One independent, however, will offer them as optional equipment on 1954 models. Car makers have been looking at tubeless tires but apparently the big stumbling block at the moment is their higher cost. Tire manufacturers are continuing their development work and perhaps by another year the picture may change.

HUDSON, FIRST COMPANY TO USE THE GM linkage booster type power steering, also is planning to adopt the Monroe unit for its lower priced lines. Hudson will soon announce adoption of the Borg-Warner automatic transmission. The unit is essentially the same one used by Studebaker, incorporating torque converter, two-stage planetary gear set, and direct clutch.

AUTOMOBILE DEALERS OPERATING leasing operations are awaiting a test case to determine whether a recent Internal Revenue Bureau ruling will stand up. The Bureau says that profits made from selling cars which have been leased must be treated as income and not as capital gains, as has been the practice. Car leasers say that a test case will be brought to determine validity of the ruling.

THERE IS A GOOD DEAL OF CONCERN among dealers in the lower priced lines over the current sales fight between Ford and Chevrolet. The battle is rough enough this year, but is considered something of a warm-up for the really big knock-down, drag-out fight expected in 1954. Particularly concerned are the independents who already are feeling the effects as innocent bystanders.

FORD IS BASING ITS OPTIMISTIC EXPANSION program on four major points. They are: (1) A 53-million plus vehicle national fleet, of which 12.5 million are prewar units needing immediate replacement. (2) A steady population increase with 170 million expected by 1960 and 177 million by 1965. (3) Formation of new households at the rate of one million a year, and (4) National disposable income currently at \$245 billion after taxes are expected to expand.

DETROIT AUTOMOBILE DEALERS ASSN. will hold its first automobile show since 1940, next February 20 through 28. It will be held at the State Fair Grounds, where 150,000 sq. ft. of space in four adjacent buildings is available. All manufacturers will be represented at the show, which will include an elaborate stage production. The dealers look at the show as a kick-off to the large spring selling season.

COMPETITION APPARENTLY IS DOOMING major styling changes every three years. In the postwar era, car makers have been on the three year cycle on the basis that greatly increased tool costs made the normal two year prewar pattern uneconomical. However, intense competition is sure to bring it back with most companies who made major changes last year getting completely new models ready for 1955.

IT NOW LOOKS AS THOUGH PASSENGER CAR production this year will top six million and may go as high as 6.3 million. Up to September 20, production already had passed 4.66 million and even if production should average only 100,000 units a week for the rest of the year, the total would be more than 6.1 million.

COST OF BUILDING HIGHWAYS IS DECLINING after a steady increase since 1949, according to Bureau of Public Roads. The Bureau reports that highway construction costs during the second quarter of this year showed a substantial decline from the first quarter. The price drop is welcome news to the automotive industry, which is vigorously behind the campaign to modernize the nation's highway system.

IT IS NOW DEFINITE THAT HORSEPOWER ratings on 1954 models are going to take a substantial jump. Highest one we know is coming in 235, and it is possible that even that figure may be exceeded slightly. All companies are pushing up power either through new engines or modifications of existing ones.

LINCOLN EXPECTS TO STAY with Hydra-Matic drive and will resume production in November on 1954 models with transmissions supplied from the GM Riopelle plant operation. Lincoln was attempting to develop Merc-O-Matic but apparently found the job could not be done readily. Whether Nash will stay with Hydra-Matic is uncertain. The company is reported to be dickering for the Borg-Warner drive, but no decision has yet been made.

CHEVROLET HAS CLEARLY STOLEN a march on the rest of the industry with its plastic-bodied sports car, the Corvette. Production now is at Flint at the rate of only a few a month, but will be moved to St. Louis soon where capacity will be about 1,000 a month. Even at \$3,250, the demand for the car is so strong that Chevrolet has headaches similar to those in the immediate postwar years when pressure for preferential delivery was terrific.

Washington Wireby Ray M. Stroupe

MOTOR VEHICLE REGISTRATIONS in the United States are continuing to climb and are expected to reach 54,700,000 for 1953, according to an estimate of the Bureau of Public Roads of the U. S. Dept. of Commerce. Passenger cars will number 45,035,000, a 2.8 per cent increase over 1952, while trucks and buses are expected to total 9,674,000, a 2.4 per cent rise.

LACK OF UNIFORM LAWS on passing of autos headed in the same direction is helping to create more highway accidents. The District of Columbia and 29 states allow drivers to pass a vehicle moving in the same direction on either the right or left side. Sixteen states bar passing on the right. Cross-country drivers have a hard time remembering which law applies in the state they're entering.

UNOFFICIAL PREDICTION IN THE CAPITAL is for output and sale of six million cars this year. Same source says 1954 will be "another good year in the motor field," but sales efforts will have to increase as production climbs. Rapid population growth, high rate at which new families are forming, upswing in living standards, and scrapping of three million old cars each year are reasons for good demand for cars.

INSTALLMENT CREDIT AMONG AUTO BUYERS is found to be in sound condition. A large independent financing company says fewer than eight customers out of every 1,000 are more than 30 days behind in payments. This firm finds average new car buyer makes a 42 per cent down payment and pays off remainder in 24 months. About the same figures apply to used car buyers, except that complete amount is paid sooner.

THE WHITE HOUSE CONFERENCE on Highway Safety has been set for February 17-19, 1954. Conferees will represent business and industry, labor, farming, and professional and veterans' groups. Governors will be asked to send spokesmen for their states. The idea of the conference is to foster community-level action to cut down the heavy toll of traffic accidents.

DOWN PAYMENT ON INSTALLMENT SALES of heavier durable goods will average more than 20 per cent, says National Foundation for Consumer Credit. The organization charges the government with using "false propaganda" to make it appear granting of credit to buyers of autos and similar goods is getting out of hand. NFCC contends that not one installment sale in one-hundred has a "no down payment" provision, except for cases where merchandise is delivered on trial.

NET WORTH OF FAMILY SPENDING UNITS when the Federal Reserve Board made its latest survey had reached a median amount of \$4,100. There were as many families with net worth above this amount as there were below. Increase in median net worth since 1950 was not less than \$500. By age groups, net worth this year varied from \$300 for consumers 18-24 years old to \$8,500 for those in the 55-64 year group.

A STRONG FIGHT AGAINST A MOVE for a national sales tax at the retail level is shaping up. Many states use this kind of tax to boost treasury totals. They won't welcome the federal government into the same field. Also, there is some feeling that any national sales tax should be applied at manufacturers' level. While discussion on this subject goes on, the White House remains silent on its position.

The U. S. Economyby Frank A. Bozek

BUSINESS ACTIVITY CONTINUES TO SHOW stability at a level which is just a little below the peak which was reached earlier in the year. Recent changes have been about the same as the usual variations with a moderate recovery from the summer lull. The prospects are for stable business with improvements in some lines during the early fall, but trends in the last month of the year are somewhat uncertain. Industrial production, volume of business, and national income for the entire year will be larger than in any previous year.

THOSE WHO EXPECT SOME FALLING OFF after the usual fall upturn point to a number of current trends which indicate the top of the boom may have been passed, although they do not forecast a decline of more than 10 or 15 per cent. Even if that drop takes place during the next year, business activity will still be very high as compared with most years when business has been considered very good.

OUTPUT OF CARS AND TRUCKS SO FAR this year has established a new record, slightly above the production during the corresponding period in 1950. The industry has been turning out cars at an annual rate of close to 7 million, which is higher than the demand from the buyers of cars. As a result, dealer stocks of new cars, and also of used cars, have risen considerably until they are the largest in many years. The total is almost double that of last year.

SOME DECLINE IN OUTPUT during the last half of the year is the normal trend in the automobile industry, but indications are that falling off will be more than usual this year. Yet the number of cars on the road is larger than ever before and the replacement demand is sufficient to maintain a high level of production indefinitely. The introduction of new models will provide an additional stimulus to sales.

IN NEARLY EVERY FIELD, buyers are demanding goods in larger volume than last year, although there have been some signs of faltering in a few lines. Consumers are buying about three per cent more goods (automobile gains are currently 2.8 per cent) than they were a year ago. Personal income received by all individuals has increased even more than consumer purchases, as it has gained close to seven per cent.

BUSINESS SPENDING HAS BEEN HIGHER and capital expenditures for new plants and equipment have risen more than five per cent. Government spending has been maintained at about as high a level as previously and excess of expenditures over receipts have been larger than during the preceding year.

TOTAL CAPACITY TO TURN OUT GOODS has greatly increased, and probably the rate of gain has been greater than the increase in consumer incomes even though all have risen. Along with the need for larger output is the requirement that the goods be produced as economically as possible. For that reason, continued emphasis will be placed on capital expenditures.

IN THE 1953 ALLOCATION OF MONEY by the clerk's office of the House of Representatives, reports the Chamber of Commerce of the United States, is an item for \$3,000 labeled "ice." As it happens, the House spent only \$1,353.60 of this, leaving a carry-over of \$1,646.40. The Senate remained cool and calm and didn't deem it necessary to spend anything for ice.

Report to Our Readers



The Depression is Over!

THE big depression in the automotive service market is all over and behind us. This time we hardly felt its pinch. And, just ahead of us is the biggest opportunity to work for a profit as *merchants of transportation*—that's what you are, sir—the merchant with the biggest market in years.

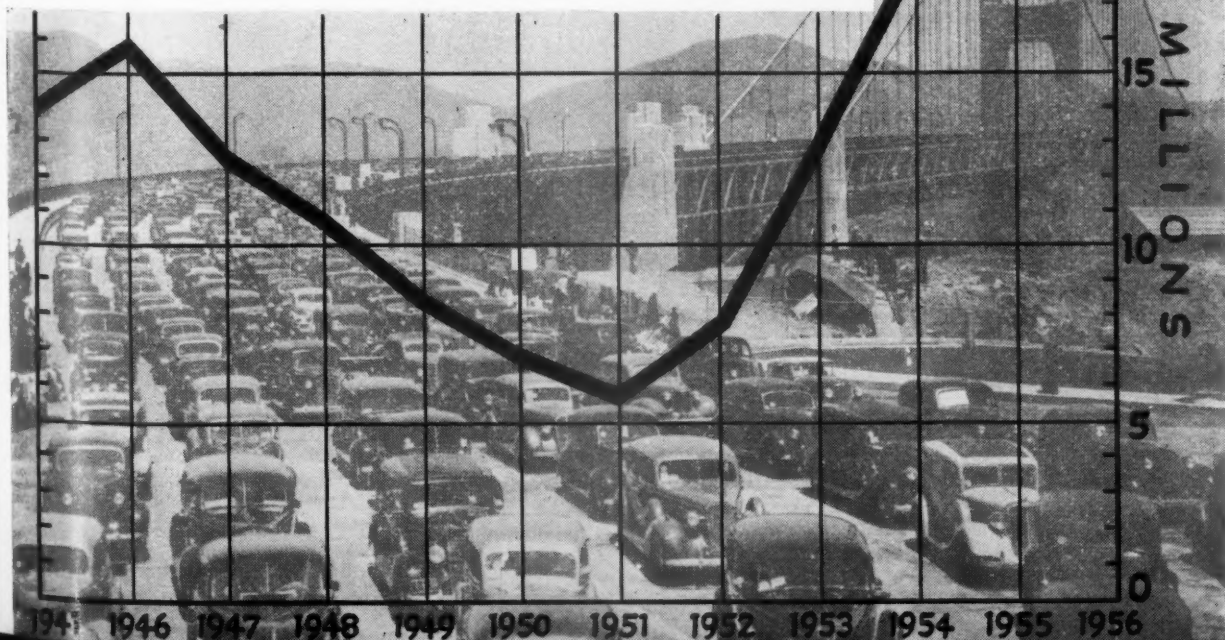
They say, you can prove anything with statistics. Here are some facts you should carefully examine before accepting the gloomy doom some people are wailing about these days.

Take a close look at the market for automotive service—wherein we've had a depression, if you please, and we've been rising out of it and forging upward since 1951.

Cars that need major service are generally classed in the age group of from 4 to 9 years, inclusive. Take a look at the depression we've had. (See below.) We came out of World War II with 16 million cars in the age group needing major repairs. The shrinkage began because we had a void in this class of cars. No cars built during the war. Downward with the curve until in 1951 there were only 5.9 million in this classification. From that point the picture changes. Upward the surge begins . . . 7.8 million in '52 . . . 13.5 million this year . . . 19 million next year . . . 22 million in '55 . . . 25 million in 1956!

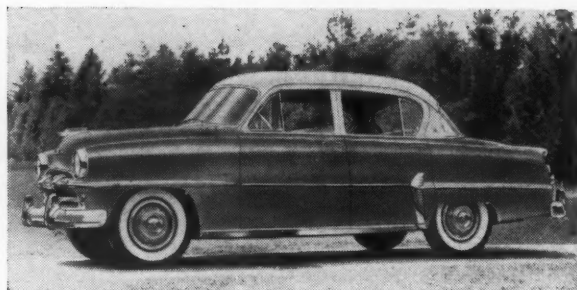
The depression is all over for merchants of transportation. Plan, man and equip yourself—there's work to be done—profits to be made! Be there "fustest with the mostest" on the ball!

Frank Tighe
Editor



The MOTOR AGE **Showroom**

Styling refinements, power steering
 and engine improvements are new



Plymouth Offers Power Steering

NEW body lines, restyled interiors, engine improvements and power steering are among the 64 advancements in styling and engineering design for the 1954 Plymouth.

The Plymouth line is made up of 11 body types in three series. The Belvedere line consists of a sports coupe or hardtop design, a four-door sedan, convertible and Suburban steel-bodied station wagon type car. In the Savoy series are a four-door sedan, club coupe and two-door sedan. In the lowest priced Plaza series are a four-door sedan, two-door sedan, business coupe and Suburban.

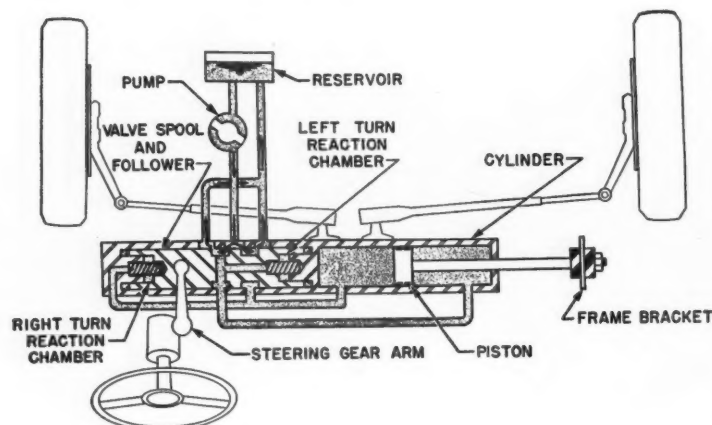
Hy-Drive, a no-shift unit made up of a combination of torque converter and three-speed transmission, will be in volume production for 1954 models. The torque converter provides a

maximum torque increase of 2.6 to 1. Coupled to the Plymouth engine, which has a maximum torque of 177 foot pounds, it provides a starting torque of 460.2 foot pounds. The two other options are Synchro-Silent three-speed transmission and Synchro-Silent with Overdrive, which provides a fourth forward speed for cruising. More than half of the Plymouths now being produced have either Hy-Drive or Overdrive.

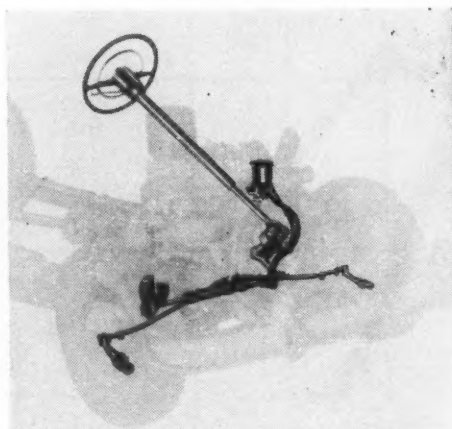
Plymouth is using the linkage type of power steering. The system consists of a rotary oil pump coupled to the generator, rubber hose lines and a hydraulic power cylinder built into the steering linkage. The cylinder has special, integral valving which permits the cylinder to

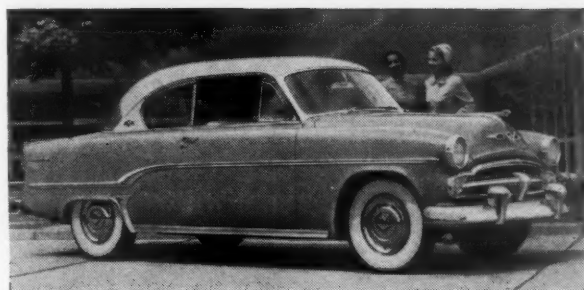
(Continued on page 102)

Diagram showing how the Plymouth power steering operates. Note arrows giving direction of fluid flow.

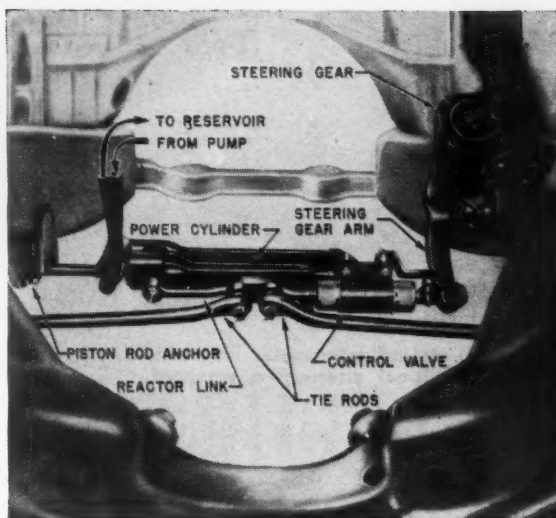


Plan view of the power steering mechanism. Power cylinder is a part of the steering linkage.





Nineteen different models in three series, including the Royal V-8, offer increased power, new fully-automatic drive and power steering.



Layout of the linkage type power steering unit installed on the '54 Dodge.

Dodge Features New Line for '54

UNVEILING of a series known as the Royal V-8 was the highlight of the 1954 Dodge passenger car line when it was introduced in dealers' showrooms earlier this month. Dodge introduced new styling and several engineering advancements in its entire line consisting of 19 different models.

The 19 models are in three series—the new Royal V-8, the Coronet V-8 and Six and the

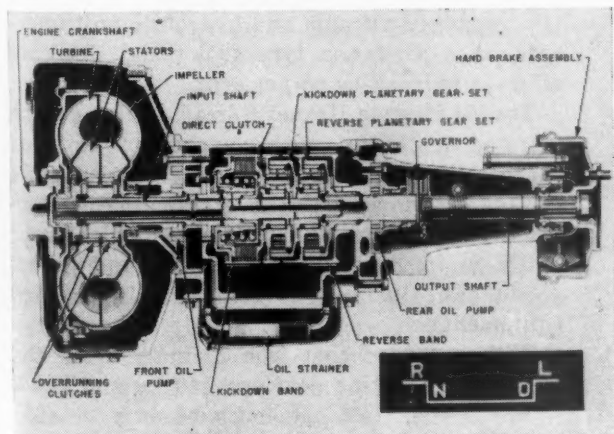
Meadowbrook V-8 and Six. They are being offered in 11 new body colors and 14 two-tone combinations.

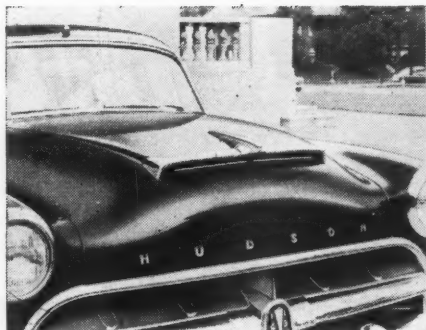
The 1954 Dodge line offers such mechanical improvements as the Red Ram V-8 engine stepped up to 150 hp and a 7.5 to 1 compression ratio; PowerFlite, a new fully-automatic transmission; and a new power steering unit. The hp of the six-cylinder engine has been raised to 110. Compression ratio is 7.25 to 1.

On the exterior, spear-like chrome moldings add to the low lines. The overall lengths of the four-door and club coupe have been increased four inches and the sports coupe and convertible have been lengthened five inches. Other major body changes include the grille design and front end. The grille is lower, wider and has a more massive appearance. The ram hood ornament has been streamlined, and new styling has been given to the V-8 crest and chrome-lined air scoop. Headlights have been redesigned and the bumper guards have been modified.

The 1954 Dodge line has a choice of two transmissions. In addition to the fully-automatic Power Flite, Dodge is
(Continued on page 132)

Cross-sectional view of the Power Flite transmission. Inset shows selector lever positions.





New hood styling accentuates low, wide lines. Functional airscop is retained.



Newly designed rear fenders and rear deck lid are the most noticeable styling changes on the 1954 Hudson. Notice the new trimwork on the rear fenders.

Increased room inside and new interior styling are featured in the new Hudson Jet. Engines develop up to 114 hp.

Hudson Boosts Power



Minor changes in exterior styling, power steering and power brakes as optional equipment plus a boost in power are the 1954 Hudson features

THE 1954 line of Hudson cars—the Hornet, Wasp and Super Wasp, the Jet, Super Jet and Jet Liner—combine changes in body styling and added power.

Larger tail lights, visible from side as well as rear, are set high in the rear fenders. Rear bumpers wrap around the edges of the rear fenders. Instrument panels have instruments grouped directly before the driver. Wrap-around rear windows and elongated quarter-windows

provide rear-view safety. All '54 Hudsons have one-piece curved windshields.

Hudson Power Steering, available as optional equipment for the '54 Hornets, Wasps and Super Wasps, is the direct-action, linkage type. It provides as much as 80 per cent of required steering effort. Spring resistance of four pounds is designed to give a constant "feel of the road."

Hudson's Power Brake system, also optional, is a combined vacuum and hydraulic unit operated by a pendulum type foot pedal. Braking effort is reduced by 65 per cent.

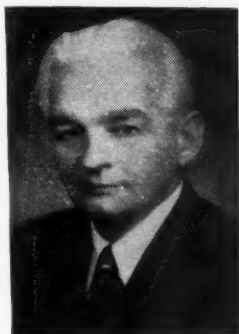
The '54 Hudson Hornet L-head, in-line engine is rated at 160 hp, with compression ratio of 7.5 to 1. With Twin H-Power, Hudson's multiple fueling system available at extra cost, the Hornet engine delivers 170 hp. Engine displacement is 308 cu. in. Bore is 3 13/16 inches and stroke, 4 1/2 inches. Aluminum cylinder head is standard equipment.

With standard cast iron cylinder head, the Super Wasp engine develops 140 hp and has a
(Continued on page 164)

MANAGEMENT CLINIC



NADA Faces the Future



National Automobile Dealers Assn.'s Miami convention, which takes place in January, will mark thirty-seven years of progress for this active and growing organization.

by Robert S. Armacost
President, N.A.D.A. and
Kansas City Studebaker Dealer

WHEN the curtain goes up on NADA's Convention in Miami Beach, January 9 to 13, the thirty-seventh year of service to new car and new truck dealers by the National Automobile Dealers Association will be under way.

Just as the automobile industry itself has come a long way since 1917, so has our national dealer association. NADA today is an indelible part of the automotive industry as well as a mirror of the progress dealers, as individual businessmen, have made in this period.

In every threat to dealers and in every crisis which has faced our respective businesses through the years we have had the reassuring protection of a potent national organization to safeguard our business welfare.

Through this organized approach to our problems, we speak not as lone businessmen selling cars, trucks and service on Main Street, but as

a closely-knit industry of about 35,000 individual business leaders who employ more than 725,000 people and who have more invested in land, buildings and equipment than has the manufacturing end of the business.

Even as our industry has grown in size, in
(Continued on page 78)

Cabinet Members To Be Principal Speakers

SECRETARY of the Interior Douglas McKay, who in private life is a Chevrolet-Cadillac dealer in Salem, Oregon, and Postmaster General Arthur E. Summerfield will be the principal speakers in Miami at the NADA convention in January, it has been announced. Like Secretary McKay, Postmaster General Summerfield is also a car dealer owning the Summerfield Chevrolet Co., one of the largest dealerships in the nation, with headquarters in Flint, Mich., and branches in Clio and Grand Rapids.



The Picture Has Changed

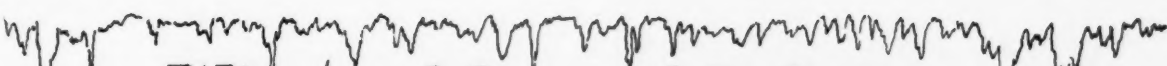
In Selling Winter Service

Stiff new competition! In this "tight money" market, motorists may postpone needed service to patronize other retailers who employ more dynamic advertising

by Arthur Nellen, Jr., Managing Editor

THE experts tell us that we're moving into a selling period in which competition will be the stiffest that it has been since World War II. Not that money is scarce, they say, but the consumer will have to be "wooed" into parting with it. Savings are at an all-time high, an indication that the public is not parting with its money as readily as in the past.

This means that the retailers will compete harder than ever for the consumer's dollar. "Easy terms," "2/3 off list" and other such come-ons will present strong competition for the normally placid advertising and sales promotion of the retail automotive service indus-



Winter Money Makers

Cooling System

Flush radiator and block
Examine radiator, hoses, clamps and fan belt
Test thermostat
Install antifreeze
Install rust inhibitor

Electrical System

Test battery—recharge or replace if necessary
Clean terminals and check connections
Check operation of voltage regulator

Heater

Test operation of heater and defroster
Check fresh air ducts for obstructions
Examine heater for water leaks

Tires and Chains

Install mud and snow tires
Recap or regroove bald tires for traction
Examine chains and replace worn links

Fuel System and Exhaust

Set carburetor accelerator pump for winter
Check heat riser operation
Check automatic choke operation
Remove sediment bowl and clean
Install gas line antifreeze
Examine exhaust system for leaks

Ignition System

Replace points and condenser
Test coil
Clean and gap (or replace) spark plugs
Waterproof ignition system

Windshield Wipers

Test wipers and replace blades if necessary
Install anti-freeze solution in washers

Chassis

Lubricate chassis
Change engine oil
Change rear and transmission lubricant



Consistent advertising of these services will help impress customers with the importance of winter service.

try. In coming months, many of the dollars which should go for service, parts and accessories may be spent on appliances, clothing, furniture and so forth.

The picture has changed—and the height of this competition will probably be felt by many shops this winter. The car owner who spent \$50 last year for accessories and motor service, such as tune-up, snow tires and the like, may be inclined to put off auto repairs for a “bargain” television set or new carpeting.

Understanding that the situation exists, repairmen should analyze their advertising and sales promotion programs and alter them to fit the new conditions. Fortunately, the automotive service industry is a field which has always used “clean” advertising and has shied away from high pressure sales promotion methods. Customers are not usually drawn into repair shops as a result of bargain prices, clearance sales or other devices which often prove to be “come-ons.” And it would be a mistake for

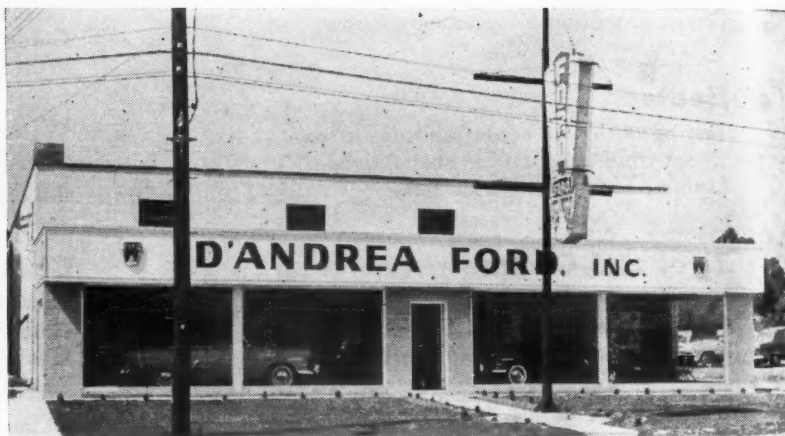
repairmen to turn to these methods to combat other retailers. The answer lies in regular advertising—down to earth, pointed, consistent advertising which will awaken car owners to the necessity for winter service. In direct mail, newspaper, radio and television advertising, posters and all the other forms of putting the shop's name before the public, consistency and good taste are far more effective than “splash.”

This doesn't mean that a repair shop operator or service manager should take a course in advertising in order to do the job right. Car factories, trade associations and parts manufacturers make an excellent selection of advertising material available to the trade. The trade should use this—now more than ever.

Late Fall is an excellent time to start an advertising campaign. Emphasize the services which are considered essential for safe, trouble-free winter driving. Make the customer look upon preventive maintenance as a necessity.
(Continued on page 86)



The circus tent and shack shown above housed D'Andrea Ford's service and sales departments through a cold winter until their building (right) could be completed. They moved into their new quarters this past Spring.



Bob D'Andrea looks over some paper work with his wife, who handles the office details. Mrs. D'Andrea contributed much to this success story.

BOB D'ANDREA is a little guy—wiry, with darting brown eyes. He's a little guy by car dealer standards, too—just everyday folks like you and me. But he's proved what the average person can do in this man's country.

As sales manager for a Baltimore, Maryland, Ford dealer, happily married and about ready to build a \$30,000 home, Bob had done quite well for his 38 years. Recently a 60-second phone call changed his entire life. He had an offer to take a Ford franchise in Aberdeen, Maryland, but had to make up his mind before the phone call was completed.

Says Bob, "Obviously, I de-

Could it Happen—but Here?

Here's a story of American business enterprise in action. A "little guy" opens a dealership the hard way—without "pull" or a mint of money!

by Arthur H. Nellen, Jr.
Managing Editor

cided 'yes,' and it's lucky I didn't know what was in store for me, or I might not have had the courage to take the step!"

Today D'Andrea Ford inhabits a neat looking building on the edge of Aberdeen, but the chain of events in-between illustrates some of the trials and tribulations of a man who tries to build a dealership from scratch.

Aberdeen had a Ford dealer previously, but it passed through several of the family's hands until death concluded its operation. When a stranger came into town to open a new agency, public sentiment was not quite as warm as it might have been.

Bob put up the \$30,000 which was to go into his new home, and managed to raise enough cash to set the wheels rolling. But the real estate situation was tight, and he was having a tough time finding a lot on which to build. The old dealership was in an out-dated building which was unsatisfactory for a new start. The only suitable piece of ground was on the south end of town, and he had to get that or nothing. Bob drove 1,000 miles in one week, just trying to make arrangements to obtain this lot. Persistence paid off, though, and the deed was finally his.

(Continued on page 82)



Above. The showroom is attractively decorated with paneled walls. Note the overhead door at far end. D'Andrea bought only the best for his shop, including four two-post lifts (below), overhead lube equipment and the latest alignment machine (bottom).





Pop O'Neill

Pop Meets Resistance

The battered truck was swarming with police and spattered with blood. Its owner was gone. But the big mystery to Pop was what had caused that engine to stall



EVER notice that some guys and gals who wait so long to get hitched get the biggest kick out of the harness? Seems like these dyed-in-the-wool bachelors successfully resist the fairer sex for twenty years, but really tumble about the time they reach the dangerous forties.

Take the case of Ben Butler and Minnie Twimble. Ben worked for twenty years on a dairy farm, saving his money and letting the women alone. Seemed happy, too, for nineteen of them. And then all at once he revolted, kicked over the traces, took to drink and began making up for lost time.

Minnie Twimble, who was currently heading the Temperance Group, found Ben asleep on the courthouse steps, a bottle under each arm and one inside. She took him home, in the interest of his salvation; sobered him up, in the interest of humanity; and then darned if she didn't marry him, in the interest of preventing it from happening again.

That's when Ben Butler lost a good name. He became Hon (for honey) to lovelorn Minnie, and in a small town that means everybody else. Restitution, or something, set in. If Hon Butler



The state police would not let Pop move in. "There's been an accident," they said. "You can tow it to your garage after we get fingerprints."

had lived a peaceful life as a young buck, he was to make up for it now, for he was soon to learn that one devoted wife was much more trouble than thirty Jersey cows.

The make-over of the man was fast as it was deadly. The Butlers moved to town. They set up a schedule of eating, sleeping, walking, love-making and entertaining that was to make a dairy farmer's day look sick. Minnie was to bloom at last; and late blooms require proper setting and a great deal of cultivation. But then there's no fool like an old bachelor, especially when he has been salvaged from loneliness.

With the town house came need for transportation—and transportation was another thing neither Hon Butler nor his comely wife knew anything about.

"Now you take Jersey cows . . ." Hon started to say, but his wife hushed him with, "You keep your Jersey cows out there on the farm, Hon Butler, but right now you start thinking about giving me just half the attention they get." Then Hon thought about telling her that a good Jersey cow from a numerical standpoint alone needed twice as much attention as a wife—but he thought better of it.

Instead he went to Pop O'Neill because Pop was the only man in the automotive business that he knew. "Now you take feed for cows . . ." he said to Pop.

But Pop interrupted, "Well, I'm not in the feed or the used car business, Hon, but maybe I could help you. What did you have in mind?"

"Transportation, just transportation, for me and Minnie and a cow or two—sometimes. Gotta carry some feed now and then, and there's a matter of manure . . ."

"That just about requires a truck, I guess. I just happen to know of a bright red 1949 International pick-up truck you might be able to use."

"How much?"

Pop called to the man in the doorway, "Jim, you want to sell that truck, don't you? Here's a buyer for you."

"Sure. You want a truck? Take \$500 for her as she sets."

Hon chewed a match stick. He looked her over carefully. The bed was big enough for the largest of Jersey bulls. Steering wheel felt like a million.

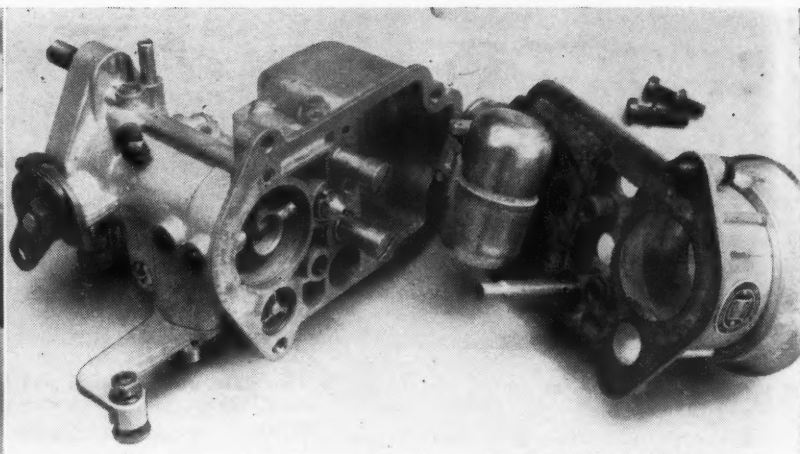
(Continued on page 120)

Something New in Carburetors

The Italian Weber

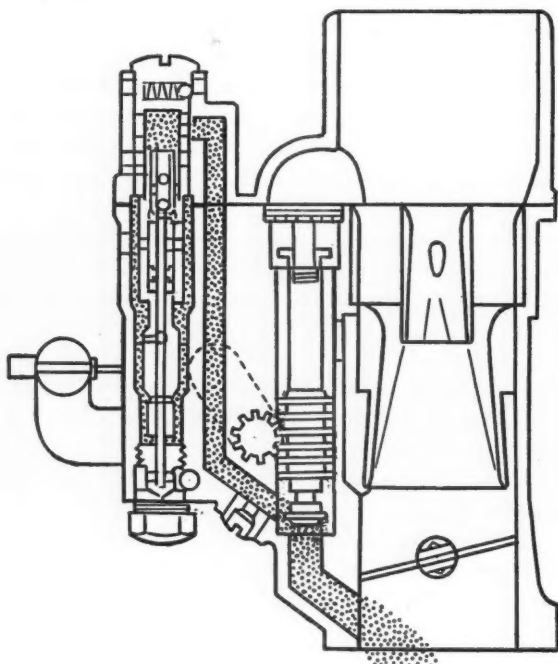


Above. The main jets can be removed without taking off the air horn.



Above. Removing the air horn and the float assembly. The float is adjusted by bending the tang at the needle valve.

Below. Cutaway of the special starting device. This unit takes the place of the choke butterfly in the air horn.



By Jack Montgomery, Technical Editor

THE Weber Carburetor, manufactured in Italy, became popular for installation on American cars left overseas after the war. It is now being tested by taxicab fleets as well as on race cars and sports cars. Weber designed the carburetor so that it could be adapted to any engine simply by changing the various jets and venturis.

A special starting device is found in all Weber carburetors; it is actually a small subsidiary carburetor built into the main carburetor. This device has the ability to function separately or in conjunction with the main carburetor. The device, called the "economy super-aspiration control," has the three following functions: (a) starting a cold engine; (b) providing extra capacity for an engine operating at high speeds; (c) modifying the air-fuel ratio by means of a supplementary air intake pipe . . . this provides a lower fuel consumption

An unusual starting circuit is one of the many unusual features of this new carburetor now on test in the U. S. A.

Top. An exploded view of the carburetor body, showing the jets and the starting device worm gear and drive gear.

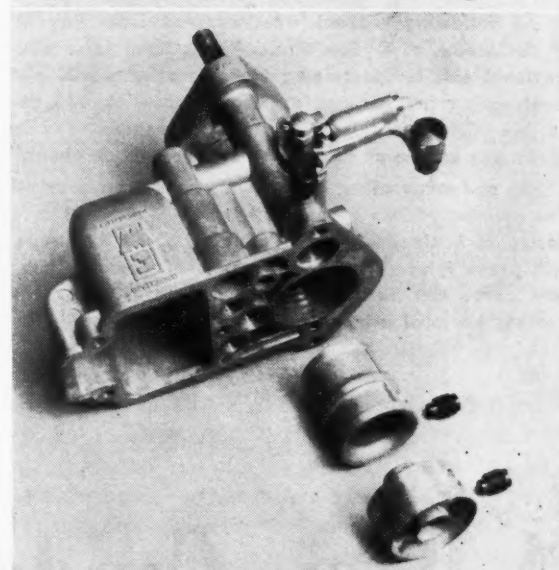
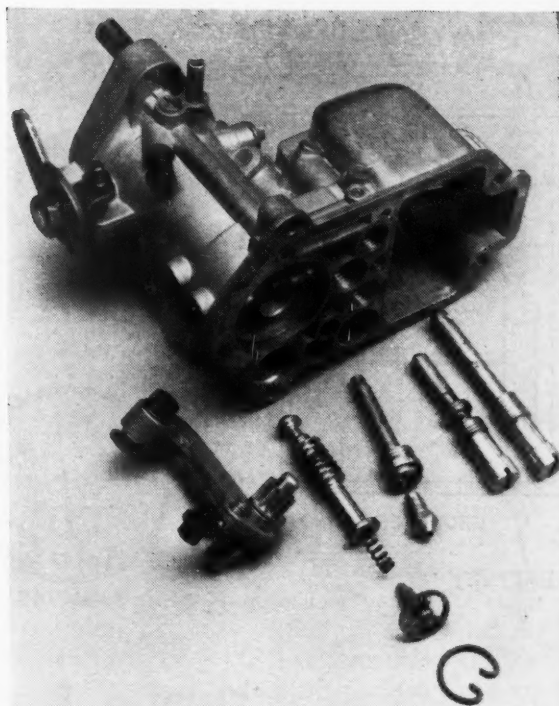
Center. The venturi is held in place by set screws. When the set screws are removed, the venturi can be tapped upward.

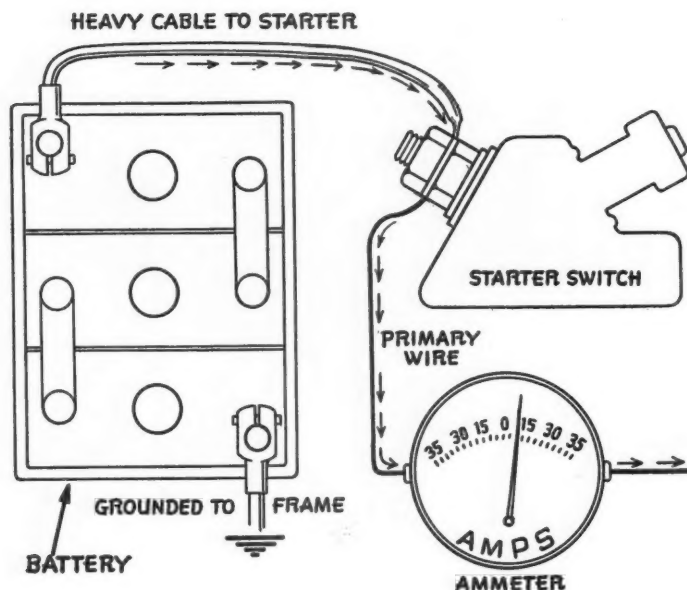
Bottom. An exploded view of the air horn, needle valve, seat and float.

at times when it is not necessary to operate the engine at full throttle. The admission of extra air also serves to increase the total volume of air drawn in by the engine, which tends to diminish with increases of altitude when in mountainous sections of the country.

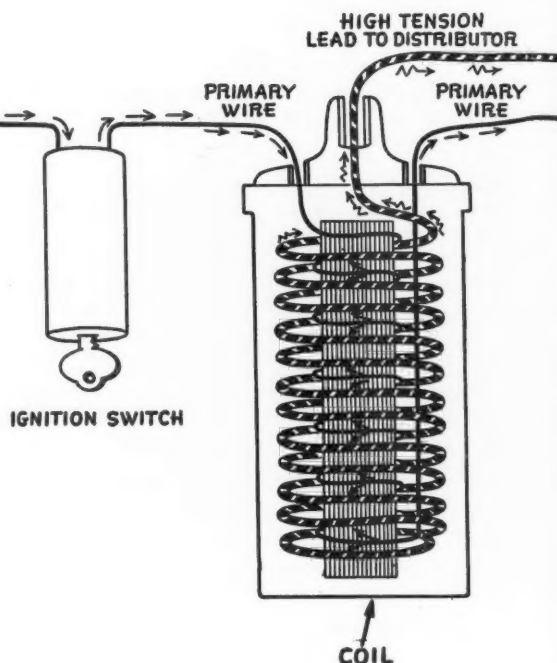
When the engine is idling with the butterfly closed, the vacuum generated by the pistons during their intake stroke reacts by means of appropriate passages on the low speed jets. By gradually opening the throttle, the manifold vacuum diminishes and its action on the low speed jets ceases. The remaining vacuum now begins to react on the main jet across the tube, its suction being increased by the venturi. When the engine changes from idling to maximum speed all fuel is supplied through the main jet, which exhausts into the venturi diffuser; the fuel in the bowl around the emulsion tube of the main jet contacts the atmosphere through the air adjusting screw. The emptying of the accelerator well is faster as the throttle butterfly action is increased. The accelerator well will fill only when the throttle butterfly is returned to its idling position, re-emptying itself as the engine is accelerated.

The exact supply of air fuel ratio mixture for various engine rpm adjusts itself automatically to all phases of operation, because the elements that determine the timing of the carburetor have been previously calculated and tested for a given engine.





This diagram shows, in simplified form, the flow of current through an ignition system. Straight arrows indicate primary current, jagged arrows indicate secondary (high tension) current.



THE following request was received from Ray M. Beckstead, of Ogden, Utah. "Let's have some educational articles pertaining to the mathematical and engineering functions of an engine, showing and describing firing order of 2 and 4 cycle engines, and so forth. The article on the 12 volt system was excellent."

You and many other Motor Age readers have asked for articles of this type, Ray, so here's the first in a series of basic engineering articles which, we hope, will prove interesting and informative. These articles will cover the basic principles of operation of the various parts of a car.

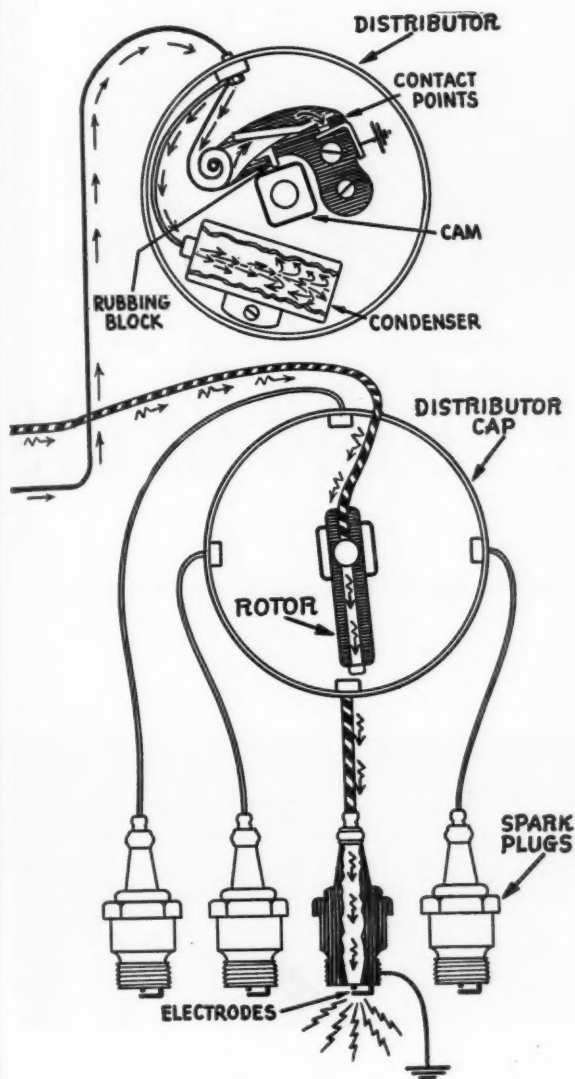
A Basic Guide on the Ignition

THE purpose of an engine's ignition system is to ignite the charge of fuel in the combustion chamber. To set off this mixture of gasoline and air, a spark plug is used. Let us trace the path of the current backward from the spark plug. In order that the spark plug gets its current at the right time, with respect to the position of the piston and the valves, the cur-

rent is directed through a distributor, which consists, basically, of a rotor, contact points, a rotating distributor cam with a lobe for each cylinder, and a distributor cap with points to supply each spark plug. To prevent arcing of the points as they open, and to provide temporary storage for the current as the points open (which will be discussed in detail later), a con-



MECHANIC TRAINING



System

denser is connected across the contact points. Since the pressure of the mixture in the combustion chamber is roughly 100 psi, very high voltage is required to bridge the gap between the electrodes of the spark plug. Voltage is stepped up from six volts in the electrical system to as much as 20,000 volts by use of a coil.

Going back over the ignition system in more

detail, let us start with the closing of the ignition switch. When the key is turned "on," current passes from the battery (which is grounded to the frame of the car) to the ammeter, and on to the coil.

The coil consists of two sets of tightly wound wire, one of which is quite heavy, and the other much finer. The heavy windings are called the primary and carry the 6-volt current from the battery. The finer windings, of which there are about one hundred times as many, are called the secondary, and supply high-tension current to the distributor.

The current in the primary circuit comes from the battery and passes through the primary windings of the coil, and thus out to the post on the distributor housing. As can be seen from the illustration, the breaker points and condenser are connected to the primary circuit. The breaker points consist of two contacts, made of steel with a tungsten tip. One of these is mounted on a spring-loaded arm, while the other is stationary. The moving point is actuated by the revolting cam block on the distributor. An oil-impregnated rubbing block mounted on the arm of the moving block is contacted by the cam lobes, so that it opens and closes, breaking the circuit once for each cylinder. With these points making contact, the primary circuit passes through and out to the ground, since the stationary point is grounded.

As the current passes through the primary windings, a laminated core in the coil is energized in much the same way as an electromagnet. The magnetic field set up in this core energizes the secondary windings of the coil at the same time. Since there are approximately one hundred times as many turns in the secondary winding as in the primary, and since the voltage in all the windings in the coil will be the same, the total voltage in the secondary windings will be about one hundred times as high as the primary.

(Continued on page 116)

Inspector Sherlock Jones in The Case of the Gears

The Inspector focuses his magnifying glass on eleven guilty gear teeth, showing



NORMAL WEAR: The working surfaces of the teeth are polished due to sliding and rolling action. After break in, wear should practically cease.

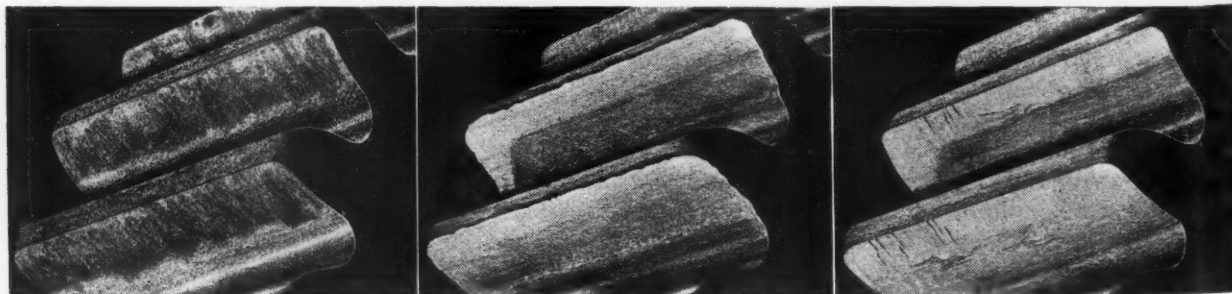
INITIAL PITTING: The formation of tiny pits on the tooth surfaces. Usually starts near the pitch line (shaded area) and occurs when gear is nearly new.

PROGRESSIVE PITTING: Formation of pits continue, sometimes until unpitted areas of the tooth surfaces are insufficient to carry the load. Shape may be destroyed.

BURNING: Indicated by discoloration of tooth surfaces, showing excessively high temperatures, caused by overspeed, overload, or faulty lubrication.

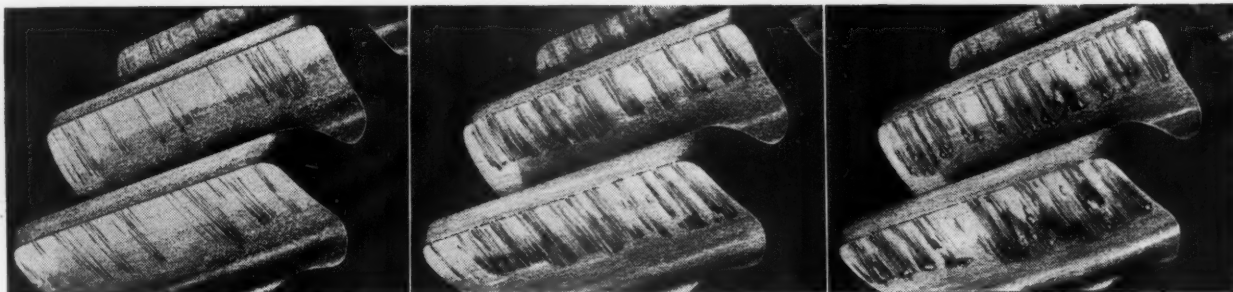
ROLLING AND PEENING: Slight "fins" form at the top edges and ends of the teeth. Peening is caused from intermittent loads transmitting "hammer blows" to the teeth.

CRACKING AND CHECKING: Results from loading lubricating conditions causing temperature fluctuations. Also from excessive hardness.



s That Failed

reasons for premature failure in each case



ABRASION: Wearing away of the tooth surfaces, due to presence of foreign matter such as dirt, grit or metallic particles in the lubricant, causing abrasive action.

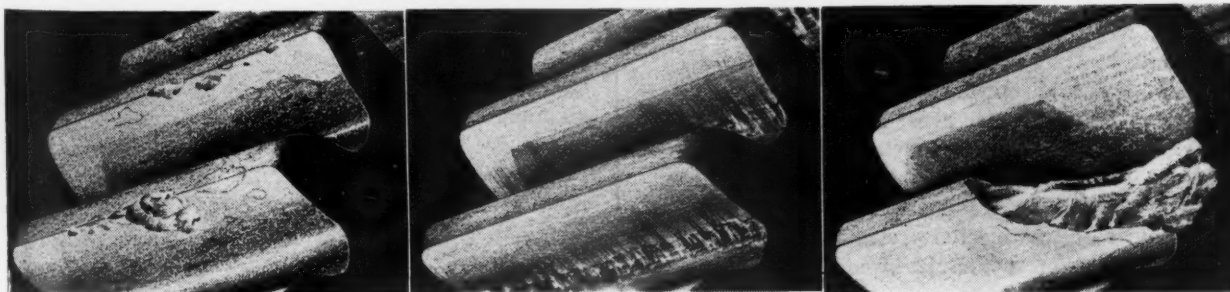
SCORING: This condition results from excessive loading or inadequate lubrication. Tooth surfaces may be roughened only in small areas and in the same positions.

GALLING: This is an aggravated condition of scoring caused by particles of metal being torn from the tooth surfaces through seizing and "welding."

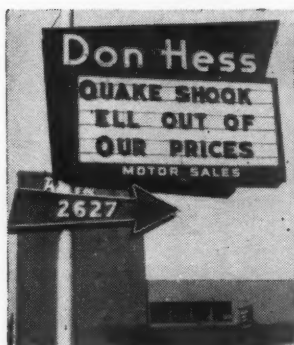
CHIPPING: Breaking off portions of material at the edges of the teeth. It indicates brittleness of the metal when it occurs under normal load.

GOUGING: Occurs in unhardened gears with interference between the flank of the driving pinion and the driven gear tip. Gear teeth gouge near the roots of the pinion teeth.

FATIGUE AND BREAKAGE: This term refers to tooth breakage which results from repeated loading, and is usually characterized by the formation of cracks.



ideas in action



Catchy Copy

As a potent means for the better merchandising of used cars, the Don Hess Motor Sales of Berkeley, Calif., recently installed a new sign employing changeable copy areas. This type of display was selected for it permits the featuring of current

specials and incites new interest in the sign.

Community Leader Role Pays Off

Does it really help business to take a leader's role in the affairs of your community—like running for mayor, joining the fire department, heading the Civic Association?

Ed Mayberry of Mayberry Motors, a Hudson dealer at Woodcliff Lake, N. J., knows the answer to this. He has done all of these things in the year or so since he made his debut in the auto business after many years of newspaper work around the world.

One of the first introductions Woodcliff Lake had to Mayberry occurred last year. Attempting to call on a customer in one of the new sections in this suburban town, he discovered no street signs had been put up. No one knew for sure where any particular street was. The town fathers, it seemed, couldn't agree on how much to pay for the signs.

Mayberry volunteered to supply 24 temporary signs at his own expense. He painted them himself, calling on his past experience as a letterer. When the signs were up, he mailed a personal card to every home-owner in the area, telling how and why the new signs came to be. He has been able to trace 20 steady new customers directly to this sign episode—which cost him only \$10 in materials, he figures, and perhaps four hours' time. Like all his new customers, these 20 received a personal letter of thanks for their business after their first visit.

This year he was elected president of the local Civic Association, which is already benefitting

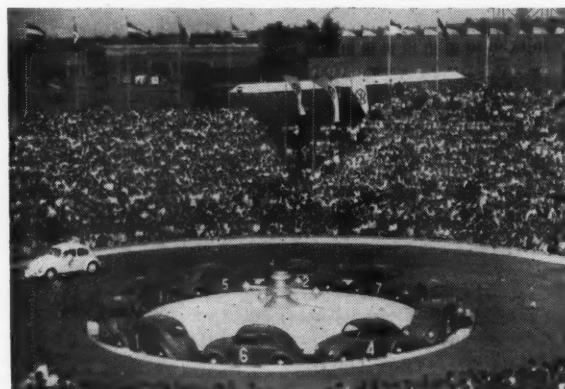
from his unusual service. He prints the Association's four-page "Civic Report" on a printing press he took in last year in payment of an \$80 debt. Set up in a corner of his renovated service department, it has been used to print stationery, handbills, and other business literature.

Another tool of his newspaper days which is proving handy in selling cars is a 4 x 5 press camera. With this, Mayberry takes his own pictures to illustrate his publicity and advertising literature.

There are a dozen more projects—among them a safe-driver clinic—which he hopes to start on in the future. He says they don't interfere with his business; they are his business.

Ceremony Features Auto Roulette

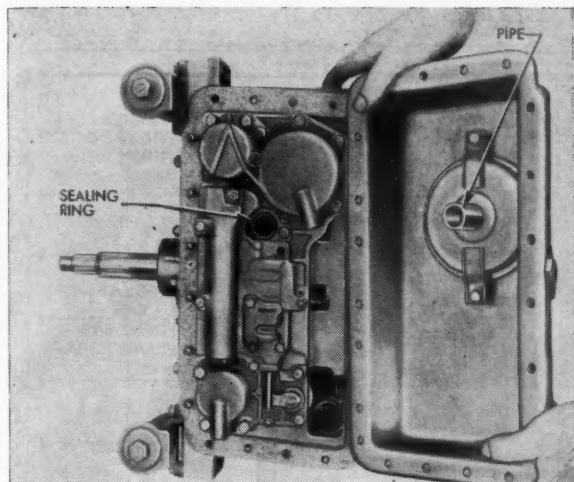
Here's an idea that could be adopted for use in the U. S. Five of the cars were prizes on this giant roulette wheel of Volkswagen automobiles at novel ceremonies to mark completion of the 500,000th Volkswagen recently in Germany. Entrants in the competition were all Volkswagen employees, each of whom received a four-number ticket.



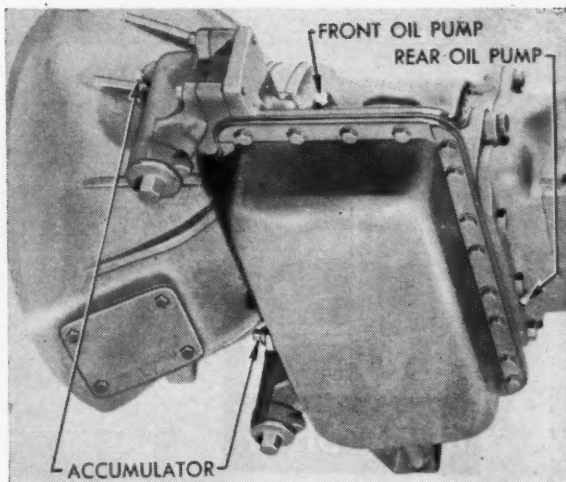
Winning numbers were determined by a striped ball shot by the white "croupier" Volkswagen seen circling the wheel at far left. The ball was returned to the "croupier" by a girl in white after each spin. The numbered autos of the wheel are colored green and red.

\$10-WEDUNIT-\$10

We'll pay \$10 for service or sales merchandising ideas that have paid off. Send your "WEDUNIT" in 150 words or less, preferably with a photograph illustrating it, to Ideas in Action, Motor Age, Chestnut and 56th Sts., Phila. 39, Pa.



A leaking sealing ring, shown above, is a probable cause of excessive slippage in all ranges.

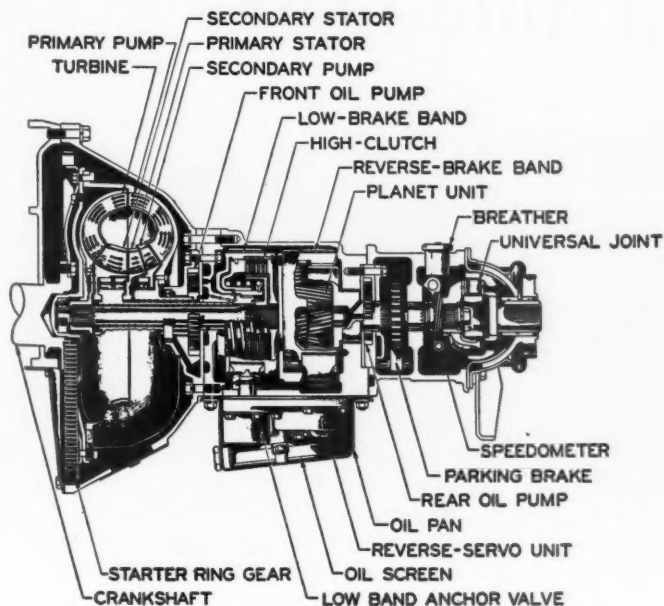


Shown here are the points at which gages are attached for making oil pressure tests on the Dynaflo.

Quick Trouble Shooting on DYNAFLOW

by Ed Shea, Assistant Editor
Chilton's Motor Age Flat Rate
and Service Manual

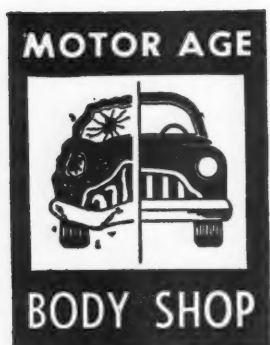
Explained here are the main points
to watch for when trying to locate
trouble on a Dynaflo transmission



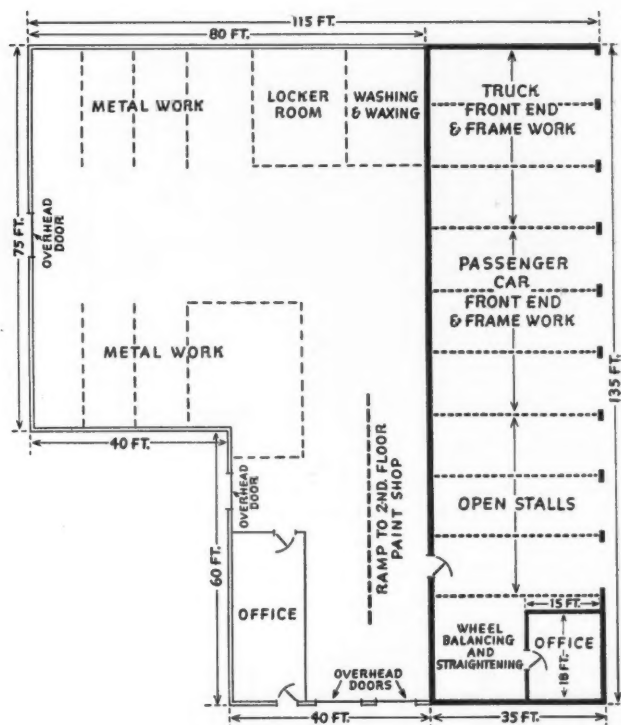
MANY repair shops believe that the Dynaflo transmission is a complicated mechanism requiring special tools and equipment when actually all that is required for trouble shooting is good common sense, some basic knowledge of the transmission, a pressure gage and a standard set of hand tools.

The Dynaflo is a comparatively simple automatic transmission having a torque converter and manually operated control valves. Since there are no hydraulically shifted control valves within the transmission trouble shooting is

(Continued on page 142)



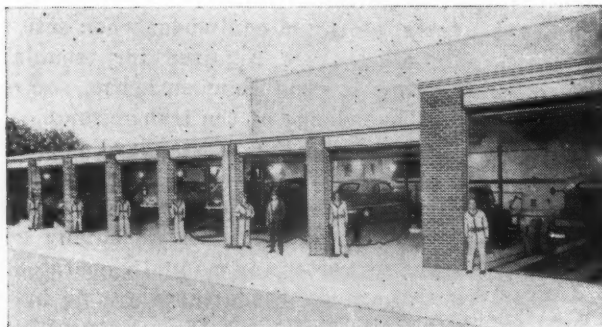
When this shop was expanded to handle wheel alignment and frame work, sales promotion methods were altered to fit. That department now does \$6,000 worth of business monthly



Floor plan of the expanded Rosslyn Auto Body Shop. Note the large amount of space devoted to alignment and frame work. The heavy line indicates the size of the original shop.

Frame Work is Big Business at Rosslyn Auto Body

This view shows the frame shop entrances to each stall, a practical design for eliminating bottlenecks.



THE frame straightening shop of the Rosslyn Auto Body Shop of Rosslyn, Virginia, zoomed from practically zero five years ago to a current \$72,000 annual.

The recently completed 130 ft. x 35 ft. building added to the main shop is an acknowledgment of this rapidly expanding operation. Providing nine new stalls for the frame and front end volume the Rosslyn Auto Body Shop was certain it could get from the metropolitan area, the new frame straightening shop now handles 200 more cars and trucks a month—increasing monthly volume to \$6,000.

How did they do it? Shop foreman
(Continued on page 94)



BODY SHOP TIPS are worth

\$7.50

If you've developed an idea that has helped you to do body and fender work or painting better or faster, it may be worth money. Jot down the idea and, if necessary, make a rough sketch. Sometimes a snapshot will help. Just make the description of your BODY SHOP TIP clear, and if it is used, you'll receive a check for \$7.50.

Lump of Solder on Thin Metal Prevents Bend When Drilling

I have found a way to brace a piece of thin metal, such as the dashboard, so a hole could be drilled without bending the metal.

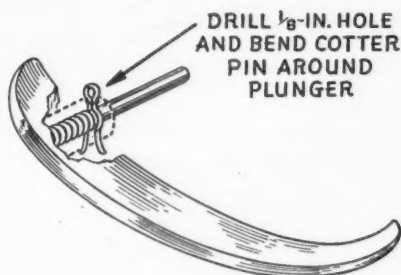
With a soldering iron, stick a lump of solder where you would normally center punch it. The diameter of the solder should be slightly smaller than the drill used, and 1/16 inch thick. The solder will easily give way to the drill and hold it there until the hole is started in the metal.

For more accurate work, flatten the top of the solder with a file. *James Maugeri, 1037 Fernon St., Philadelphia 48, Pa.*

Bend Cotter Key Over Pin To Fix Ford Door Handle

I have found a simple way to repair door handles on 1949 Fords.

Since the activating pin and spring continuously work out, a new handle would seem to be necessary. However, by drilling a 1/8 inch hole



in the end of the handle and passing a cotter pin around the activating pin, through the hole, and bending the ends of the cotter pin, the old handle will work better than ever. *James R. Spirko, Spirko's Garage, 228 Helen St., McKees Rocks, Pa.*

Adjusting Chrysler Doors With Flat Washers

I have found that most doors that have a bind in the hinges can be easily aligned by taking out the three 3/8 inch cap screws of the top hinge that are screwed to the door. Put 3/8 inch flat washers between the hinge leaf and door. The flat washers can be held in place by a

magnet while you start the cap screw. After the washers are installed, an adjustment of the striker plate will usually solve the trouble. *Stanley Nuttall, 541 "I" Street, Los Banos, Calif.*

Keeping Abrasive Paper From Rolling Up

When using a piece of abrasive paper, often it will roll in your hand and tear. I have found that after folding it, the open end can be stapled together to eliminate this separation. The staples are so thin and small that they don't scratch the surface anymore than the paper. It works very well on 500 paper. *C. H. Jensen, Rybak Motors Sales, Glenwood, Minnesota.*



Other valuable information of the type presented each month in The BODY SHOP is available in Chilton's Motor Age Body and Frame Manual.



by Jack Montgomery, Technical Editor

- **Chrysler Won't Idle**
- **Cylinder Misses On Cadillac**
- **Engine Knocks On Deceleration**
- **Studebaker Throws Oil**
- **Engine Vibrates On Mercury**
- **Tractor Clutch Won't Disengage**
- **Low Oil Pressure On Jeep**
- **Hudson Breaks Pistons**

Chrysler Windsor Won't Idle, Stalls at Speeds of 10-15 mph

I'm having trouble with a 1947 Chrysler Windsor. It will not idle or run without jerking when at speeds of 10 to 15 miles-per-hour.

The timing was checked. Also, the spark plugs, the distributor, and the carburetor were checked but the car still has no pick-up and continues to stall. Nothing is wrong with the ignition system. Could this trouble in the car have anything to do with the engine itself?

Also, the radiator overheats on hot days, hitting 212 degrees. I put rust inhibitor in the radiator in the spring.

*Emanuel Hermalyn
New York, N. Y.*

SINCE the engine has been checked thoroughly, I would

suggest making a compression test to see whether the cylinders are in good condition. Also, take a vacuum reading and I am sure that you will find that either the valves need grinding or possibly the head gasket is leaking. I would suggest removing the head and doing a carbon and valve job. While the car is being serviced, I would suggest removing the radiator and having it boiled out and rodded.

Valve Job and Repairs Fail To Eliminate Cylinder Miss

I have a 1949 Cadillac that misses on two cylinders. I have had two valve jobs done on it, plus many other repairs. Having read about a similar case in MOTOR AGE, I was wondering if you could help me find my trouble.

*Joseph Handlon,
North Wales, Pa.*

READERS' TROUBLE

FIRST of all, I would suggest checking the compression on each cylinder and checking the vacuum reading. If they are both all right, then the trouble is probably in the ignition system. Regarding the other case that you had read about, that Cadillac's trouble was in the exhaust manifold. Carbon deposits had built up inside the manifold, causing the plugs to foul.

Knock Develops When Foot Is Released from Gas Pedal

I have noticed, in Plymouths, Ford V-8s and International pickups, that a knock shows up when you take your foot off the gas pedal after revving the motor to about 40 mph. The motors run and perform fine in every respect until they start slowing down. Then it sounds like the rod bearings are all out. I have changed the timing gears and timing chain, checked the piston pins, rod and main bearings, but with no success.

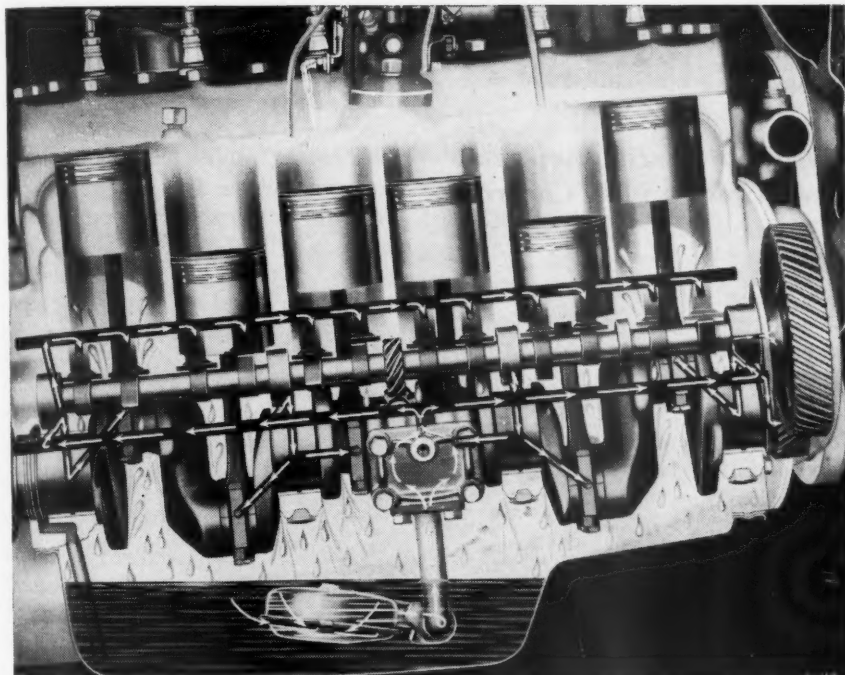
*D. D. Hogle,
Borger, Tex.*

IF you are absolutely sure that the rod bearings are in good condition and that the oil pressure is good on these jobs, then the noise is probably due to the wrist pins being too loose. A twisted connecting rod or a loose flywheel will, at times, make a noise when slowing down.

FOR ADDITIONAL SERVICE INFORMATION REFER TO CHILTON'S

CLEARING HOUSE

SHOOTING PROBLEMS



Phantom view of Studebaker engine showing oil system

'51 Studebaker Throws Oil Out Breather Over 60 mph

I have a Studebaker Champion, 1951, with overdrive. It is equipped with dual carbs, heavy-duty coil and condenser; otherwise, it is standard. Over 60 mph it throws all the oil out through the oil breathers. Here is what we have done to correct the trouble. We checked the compression and the test showed from 96 to 103 lb. The oil pressure is normal. The crankshaft is less than .001 under. We are going to rebore the block, but it hasn't enough taper to justify a

rebore job. Piston clearance is less than .002. The car also has an aluminum head with an 8 to 1 compression ratio and the gear ratio has not been changed from factory specifications. I would appreciate information on what to do to correct this oil condition.

Earl Martin
Earl's Repair
Julesburg, Colo.

USUALLY, when this happens, it is due to the pressure building up in the crankcase, which is caused by blowby. More than likely, the 8 to 1 compression is the root

of the trouble. Using this high ratio, the rings can't control the blowby.

Before tearing the engine apart, I would suggest removing the filler pipe and installing baffles. Also, remove the breather pipe and pack it with steel wool.

Balance the Clutch Assembly To Stop Mercury Vibrations

We have been experiencing difficulty with respect to engine vibration on 1949-51 Mercury engines

At first we believed the crankshaft assemblies to be out of balance; however, correction of the condition did not eliminate the vibration. It is always our policy to balance the flywheel and crankshaft assemblies where vibration is concerned, but this also did not eliminate the vibration. We have individually balanced all pistons and rod assemblies to within four grams of each other. However, the vibration still continued.

We would appreciate any information regarding this problem, you may have to offer.

Engine Rebuilding Corp.
Los Angeles, Calif.

MOTOR AGE FLAT RATE AND SERVICE MANUAL



REGARDING your problem on vibration in Mercury engines I would suggest balancing the clutch assembly with the crankshaft. We find that the cover assembly has to be balanced after it is installed. One method of balancing it is to remove the clutch cover screw and add washers. Add washers to one screw at a time, trying the engine each time for improvement.

Tractor Clutch Lever Fails To Disengage When Warmed

I have a 1951 Model D John Deere tractor in the shop. The complaint was the clutch lever failed to disengage when in release position. This would only happen once or twice in a day's work and then only after the tractor was warmed up. I tore this job down after checking the adjustment. After cleaning all the parts, wire brushing the disc and replacing the clutch pilot bearing, I reassembled. Can you help me?

*F. L. Longbottom
Floyd's Repair Shop
Stevensville, Mont.*

SINCE this trouble only occurs after the job is fairly warmed up, I am inclined to believe that the release fingers are sticking in the cover assembly. I would suggest removing this and either having the cover rebuilt or taken apart and checked thoroughly.

Low Oil Pressure On A Rebuilt Jeep Engine

I have a Jeep which we rebuilt. We installed new pistons and main bearings. On a cold motor we have 50 to 60 pounds of oil pressure but when the motor is warm, the oil pressure will drop back to 15 pounds. The old oil pump was used which seemed to be in perfect condition. The camshaft bearing was in good condition also.

If it could be the camshaft bearing losing pressure, are there any plugs that can be installed such as used in Plymouths to reduce the oil

flow? Or you may have other suggestions.

*Leland Rusk
Thayer, Iowa*

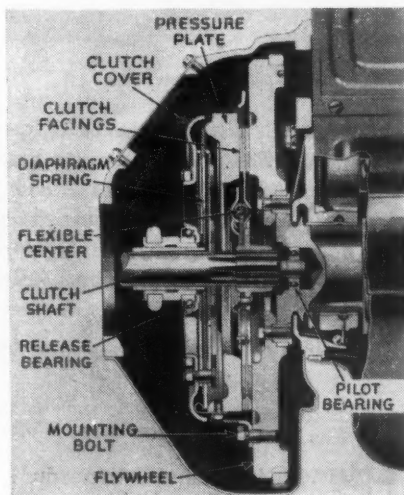
FIRST of all, I would suggest removing the oil pan and making an oil pressure test on the bearings. This will show you how much oil is leaking from the various bearings.

If the cam bearings show excessive leakage, then they should be changed as there are no metering jets for these jobs. Also make sure the check valve in the oil pump is working properly and that the pump is in good condition.

Throwout Bearing Replaced Five Times on '48 Chevrolet

The throwout bearing in a 1948 Chevrolet has been replaced five times. A new clutch and pressure plate have been installed to correct it, but without success. Also, changing the retainer plate to the transmission main drive gear bearing has not helped. I would like to have your opinion before I install the sixth throwout bearing.

*John Luevano,
U-Fix-It Garage,
Albuquerque, N. M.*



Cross section of Chevrolet clutch

IT is unusual for the ball bearing throwout bearing to fail. Try

renewing the throwout fork and the ball joint, and check the motor mountings. They may be bad, causing the engine to shift.

Hudson Engine Souped Up For Racing Breaks Pistons

We are having trouble with a 1949 Hudson 6-cylinder that is breaking pistons. At 8000 miles the No. 4 piston was broken and replaced. We re-ringed the pistons, ground the valves and installed a new con rod and main bearings.

This car is equipped with a low speed differential with a ratio of 4.5 to 1. It is used for racing and the pistons break on high rpm windup. We were wondering if anyone makes racing pistons for this car and where we can get them. How far is it possible to rebore this motor and still be safe for cooling?

We have another problem with a 6-cylinder Hudson. At 80 mph, when this car is decelerated, a sharp singing sound is noticed. Everything seems to be in perfect condition. What would cause this?

*Bob Baker
Parkway Garage
Browning, Mont.*

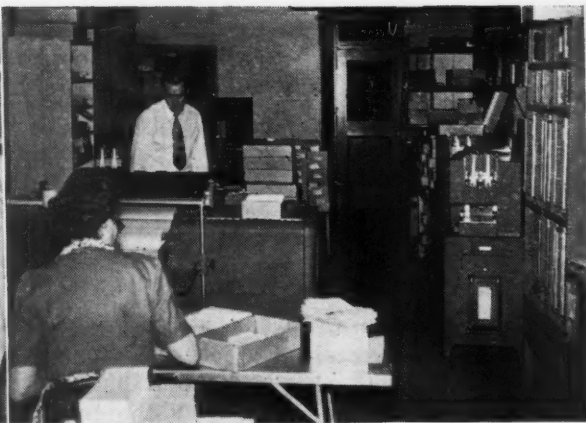
ON your first problem I would suggest that you lower the compression slightly. I believe that at high rpms, the piston may be touching the head, causing it to break. Or if this engine is detonating excessively, it would also cause the ring lands to break.

I don't know whether you are burning the tops out of it or breaking the lands; if the lands are burning the tops, it is due to detonation. If you are burning the tops, it is due to overheating or possibly using the wrong octane gasoline. I do not know of anyone making racing pistons for this job; however, I think they can be made up special.

On your block, I would say .060 would be your maximum for reboring and still have it safe for proper cooling. The grinding noise you referred to on your 1948 Hudson I believe is probably due to the timing chain singing.



One of the many functions of the tab machine shown above is to do all the billing, time for which is reduced considerably.



Most of the accounting machines are seen in this corner of the office. Cards are filed in another room.

Chris Olesen (seated) and general sales manager Bob Sellers check over a report from one of their eight stores.



THE automotive parts business, because of its nature, involves the handling of many thousands of items by name and number, as well as a large number of customers buying varying quantities with both cash and credit. Consequently, this business usually involves complicated bookkeeping, cataloging, billing, sales statistics, re-ordering and so forth. All this paper work requires a relatively large staff of personnel, and an unfortunately high percentage of errors.

Farrar Brown Company, an automotive wholesaler in Portland, Maine, believe that they have about solved this problem through the installation of a complete battery of business machines. According to Christian Olesen, Treasurer, the new method is about as close to perfect as could be hoped for. Farrar Brown's mechanical book-

Push-Button Bookkeeping

Paperwork becomes quite involved in the parts business. Here's a jobber who improved this department with machines

keeping system involves seven machines on which every phase of business transaction can be recorded, except for posting to the general ledger.

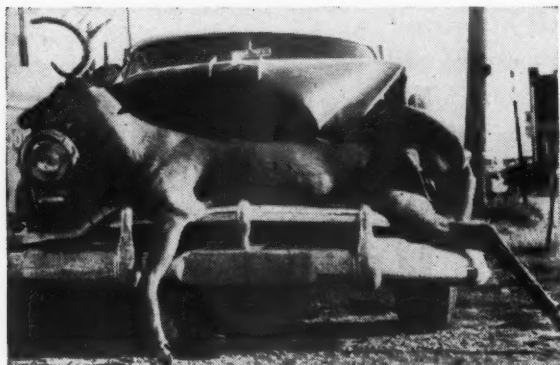
Each part in stock has a separate card. If there are ten of a certain tail pipe, there will be ten identical cards with the part's name, code number and all prices. Each account has its own card with complete information.

(Continued on page 90)

NEWScene

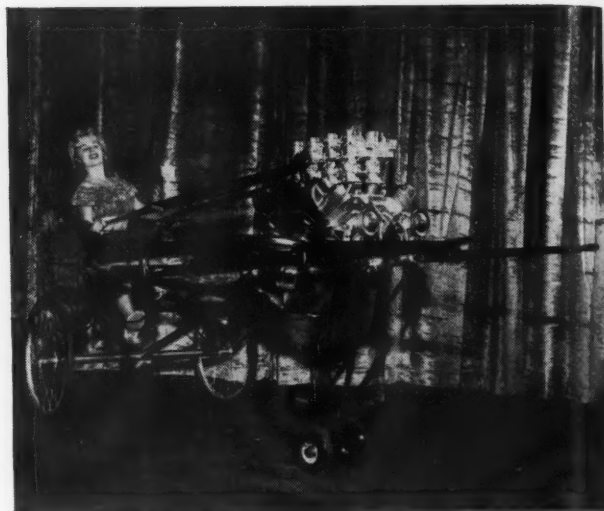
Deer That Went Car Hunting

Prentiss M. Brown, Jr., an attorney from St. Ignace, Mich., received a jolt and an unexpected repair bill when a 12-point buck, a victim of bad timing, embedded in the front end of his automobile. The buck darted in front of the car before Brown could swerve or stop. The animal was killed instantly.



Cars Crushed in Wall Collapse

Three persons were injured when the second story, concrete block wall of a department store under construction in Columbus, Ohio, fell into the street, crushing five cars. The three injured were struck by falling blocks, one while sitting in his car in front of the store.



'Freak' Wagon at Hot Rod Show

Sigrid Macey, queen of the National Hot Rod Show in Los Angeles, Calif., sits in the Crazy Drag Wagon that was the freak of the show. It's a sulky fitted with a V-8 engine with eight carburetors. It has a diagonal drag shaft, ribbon throttle controls and a nose wheel. The front tread is six inches, the rear, 36 inches.

Street Ripped Up by Explosion

Paving cement on Cleveland, Ohio's, West 117th Street crumples up like an Arctic ice pressure ridge following a mile-long sewer explosion. A car and slab of cement have been lodged against a city bus while other chunks are scattered around the area.



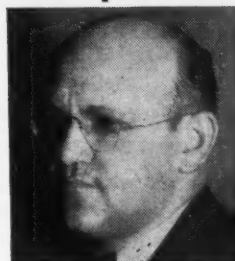


Uniform Hand Signals Adopted

The city and state of New York have jointly agreed upon a set of hand signals for motorists. Motorists whose cars have directional turning lights will not be required to use the hand signals for right or left turns. Since Jan. 1, 1952, the law requires that cars be equipped with such lights. Lights that flash with brakes do not exempt drivers from using hand signals. Top: Signal for a left turn. Center: Signal for a right turn. Bottom: Signal for "slow or stop." The new signals, for left turn, right turn, and for "slow or stop," conform with those in 35 states.

Engineering Highlights

by
Joseph Geschelin
Engineering Editor

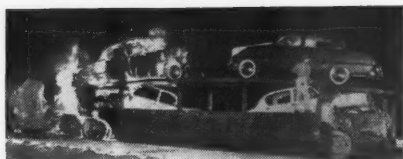


OPERATION Hydra-Matic will go down in the record books as a pointed example of the effectiveness of bigness in business enterprise. Disaster struck the Livonia Hydra-Matic plant of General Motors at 3:50 p. m. on August 12 when sparks from a maintenance torch initiated a chain of unfortunate events that razed the entire 1,500,000 sq ft structure. By 10 a. m. next day while fire equipment still was vainly engaged in checking the fire, top executives of the Corporation joined in an emergency meeting at the plant to plan the moves for re-establishing production of Hydra-Matic transmissions. By next morning, the executive group had contacted selected plants of the 116 plants of the Corporation and had borrowed from the various divisions a total of some 188 specialists. The morning following the fire most of these men were on the scene for preliminary briefing.

Disaster Affected Eight H-M Users

To management in the automotive industries, the details of Operation Hydra-Matic will be of interest from the standpoint of what can be accomplished in the face of an appalling emergency. Before considering the ramifications of the problem, let us outline the basic program initiated by the Central Office executive group. It must be remembered that the disaster affected Cadillac, Oldsmobile, Pontiac, and GMC Truck & Coach, besides stranding companies outside the GM family—Hudson, Lincoln, Kaiser, Nash.

(Continued on page 107)



New Cars Burn in Accident

New cars burn on a motor carrier on the Pennsylvania Turnpike near Pittsburgh when the carrier and a trailer truck collided. State Trooper, lower right, and a passerby, standing on carrier, begin helping remove the undamaged cars.

Lincoln-Mercury Forms Sales Managers Council

Formation of a Sales Managers Council, comprised of leading retail car dealers' sales managers from all of its 23 sales districts, has been announced by Joseph E. Bayne, general sales manager of the Lincoln-Mercury Division of Ford Motor Co. Members will be selected on a competitive basis by each district sales manager.

Forum discussions with factory officials on mutual problems whereby ideas, suggestions and opinions leading to better understanding of sales objectives can be obtained, will highlight the business session.

Directed by George O. Hackett, manager of the sales promotion and training department, the Sales Managers Council is expected to assist materially in cementing good relations between factory and retail outlet.

Henry Ford, 2nd, Among U. S. Delegates to U. N.

Members of the U. S. delegation to the United Nations General Assembly gather together in New York City to map strategy for discussion of Korean peace conference. Front row (l. to r.) are: Rep. Frances P. Bolton (R-O); Ambassador Henry Cabot Lodge, Jr.; U. S. Secretary of State John Foster Dulles; Gov. James F. Byrnes of South Carolina; and Rep. James P. Richards (D-SC). Standing (l. to r.) are: Alternates Dr. Charles W. Mayo, James D. Zellerbach, Archibald J. Carey, Jr., Henry Ford, 2nd, and Mrs. Oswald B. Ford.



World Motor Sports Show To Exhibit 'Prize' Models

Specially hand-crafted models and numerous prototypes of both European and American manufactured automobiles will be featured at the 2nd Annual World Motor Sports Show to be held at Madison Square Garden, Feb. 20-28, 1954.

The show will also feature the prize-winning cars of the London and Paris motor shows and experimental diesel and jet cars. Exhibition cars will be judged for awards.



Tricky Service Call

A Queen Bee took a fancy to the headlight of this Davenport auto, and her kingdom followed suit. When the car's owner arrived, he decided that this wasn't the ideal place to store honey, so he called an apiarist whose experienced eye located the Queen amid her subjects, and relocated her in more bee-like surroundings.



Salmson at the Paris Show

Here is the newest French-made Salmson which was introduced at the Paris Auto Show earlier this month. It is a four-seater sports car, 2 liters (70.4 cu. in.) 300 motor, 13 fiscal hp developing 108 hp. It can reach a speed of 180 kilometers (around 90-100 mph) an hour at 5,100 rpm.

NADA Conclave to Probe Problems Facing Dealers

Operational problems faced by dealers in every section of the country will be thoroughly explored in special clinics at the National Automobile Dealers Assn. Convention, Miami Beach, Fla., Jan. 9-13, 1954.

L. Flowers Hamrick, vice chairman of the NADA Convention committee for programs, said the program had been tentatively scheduled to include a session on truck sales and service, new and used car sales management, a business management clinic, and an employee relations clinic. A presentation highlighting the need for adequate highways and parking facilities will also be presented.

NADA President Robert S. Armacost's annual message will be delivered during the NADA clinic. Frederick M. Sutter, Alton M. Costley and Frederick J. Bell will also address the dealer assembly during this session.

Chanute Air Force Station Scene of Sports Car Meet

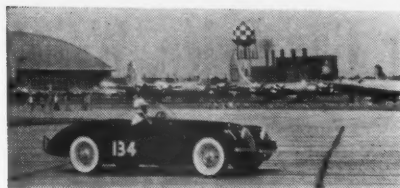
An estimated 80,000 persons were on hand to view a sports car race staged by the Chicago Sports Car Club of America in conjunction with the Chanute Air Force Base at Rantoul, Ill.

Base Commander General Byron E. Gates told program chairman Ben Harris that it meant a great deal to the personnel at the base, for it added to their own training, gave the public an opportunity to view the field and equipment, in addition to the races. Other officials intimated that the event rated high in public relations.

A total of 154 cars were registered for the race; another 116 rolled under the banner of the Concours d'Elegance. In the antique field, such classics as a '34 Duesenberg, '36 Cord, '29 Mercedes, '29 Graham, '06 Sears, '08 Maxwell, '08 Hupmobile, '03 Cadillac and '09 Stanley Steamer were on parade.

The big feature race—"The Technical Training Trophy Race"—was won by James Kimberly of Chicago with one of his Ferraris. He turned in an average of 81.9 mph for the 31 laps (102.3 miles) over the 3.3 mile course.

Among the cars which drew the



Jaguar XK120 at Chanut Field

attention of the crowd were Brooks Stevens' Excalibur J and the Maserati formerly owned by Wilbur Shaw, who drove it at Indianapolis in the "500" classics.

Classic Car Club Awards Packard Cup for 'Styling'

The Classic Car Club of America

awarded its gold cup to Packard Motor Car Company for styling of the 1953 Packards and Clippers, in ceremonies at Detroit. The award was the first made to an automobile manufacturer for current models by this group whose interest is in fine old cars.

The club cited Packard for "Outstanding contributions to the classic concept of styling and design as represented in its 1953 model cars." The award refers to the company's contour styling, featuring high fenders and low hood, which succeeds the sharp streamlining of 10 years ago.

Will Dammann

Mr. Will Dammann, pioneer in the field of automobile wheel alignment equipment and president of Bear Mfg. Co., died at Rock Island, Ill., Sept. 11.



He started an implement business in Lansford, N. D., and was the first Ford dealer there. He became acquainted and later associated with A. I. Sandbo, manufacturing starters for Ford automobiles. In 1913 the company moved to Rock Island. In 1917 the company dissolved and became the Bear Mfg. Co.

A member of the Rotary Club, The Society of Automotive Engineers, and the Automotive Old Timers, Mr. Dammann has been president of Bear Mfg. Co. since its inception.

1953 RETAIL CAR SALES BY PRICE GROUPS*

NUMBER OF CARS

Price Group	July		Seven Months	
	1953	1952	1953	1952
	Units†	% of Total	Units†	% of Total
Under \$2,000	294,834	55.51	1,831,256	53.96
\$2,001 to \$2,500	151,920	28.60	965,207	28.44
\$2,501 to \$3,500	63,180	11.90	454,965	13.40
Over \$3,500	21,193	3.99	142,621	4.20
Total	531,127	100.00	3,394,049	100.00

DOLLAR VOLUME OF SALES*

Price Group	July		Seven Months	
	1953	1952	1953	1952
	Dollars	% of Total	Dollars	% of Total
Under \$2,000	\$ 524,910,127	47.06	\$3,274,885,154	45.40
\$2,001 to \$2,500	338,464,185	30.35	2,154,005,154	29.86
\$2,501 to \$3,500	173,219,825	15.53	1,248,296,074	17.31
Over \$3,500	78,716,238	7.06	536,146,318	7.43
Total	\$1,115,310,375	100.00	\$7,213,332,700	100.00

*—Calculated on basis of new car registrations, as reported by R. L. Polk & Co., in conjunction with advertised delivered price at factory of four door sedan or equivalent model. Does not include transportation charges or extra equipment.

†—New registrations of American made cars only. Does not include imported foreign cars.

1953 NEW PASSENGER CAR REGISTRATIONS*

Arranged by Makes in Descending Order According to the 1953 Seven Months' Totals

MAKE	SEVEN MONTHS						
	July 1953	June 1953	July 1952	Units		Per Cent of Total	
				1953	1952	1953	1952
Chevrolet	128,040	137,390	62,690	798,122	508,826	23.39	20.52
Ford	99,178	72,500	47,104	574,678	401,951	16.84	16.21
Plymouth	54,864	58,405	41,361	357,233	276,716	10.46	11.16
Buick	43,194	47,526	24,863	279,936	186,332	8.20	7.51
Pontiac	39,352	42,360	21,270	242,733	156,087	7.11	6.29
Oldsmobile	32,923	35,092	17,307	201,254	131,077	5.90	5.28
Dodge	26,856	31,651	25,569	187,239	156,585	5.48	6.31
Mercury	22,270	17,768	14,311	141,738	103,974	4.15	4.19
Nash	12,178	14,031	14,492	88,718	86,748	2.89	3.50
Studebaker	13,450	17,079	11,934	97,501	101,692	2.86	4.10
Chrysler	14,321	15,307	10,845	95,876	72,363	2.81	2.92
De Soto	11,185	11,717	8,197	73,780	55,805	2.16	2.25
Cadillac	9,752	10,324	7,944	66,213	49,961	1.94	2.01
Packard	6,470	7,710	7,234	51,009	42,543	1.49	1.72
Hudson	6,236	7,348	7,906	44,792	48,275	1.31	1.95
Willys	3,140	3,942	4,853	30,495	22,377	.89	.90
Lincoln	4,435	5,010	2,737	25,998	15,213	.76	.61
Kaiser	2,067	2,657	3,994	17,505	23,791	.51	.96
Henry J.	1,173	1,142	2,675	6,242	20,161	.24	.81
MG (British)	637	752	886	4,635	4,118	.14	.17
Hillmann (British)	338	502	483	2,901	2,579	.08	.10
Ford (British)	296	334	337	2,591	2,142	.08	.09
Jaguar (British)	370	381	264	2,526	1,601	.07	.06
Austin (British)	232	284	431	2,174	2,954	.06	.12
Allstate	123	100	175	544	913	.02	.04
Misc. Domestic	87	221	331	1,268	3,036	.04	.12
Misc. Foreign	616	660	461	4,105	2,509	.12	.10
Total—All Makes	533,783	542,193	340,454	3,413,808	2,480,329	100.00	100.00

* Based on data from R. L. Polk & Co.

Current Passenger Car Price, Weight and Body Table

Following are prices at factory for cars with standard equipment as of September 27, 1953
State or local taxes, transportation and finance charges and optional equipment are extra.

BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight	BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight	BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight	BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight
BUICK					DE SOTO†					KAISER					PACKARD (Continued)				
Special 40	2010	189	2199	3675	Powermaster 6	2166	168	2334	3480	Manhattan	2395	202	2597	3235	Cpe. Conv.	3200	286	3486	4125
Sedan, Del., 2d	2064	191	2255	3710	Club Coupe	2186	170	2356	3535	Club Sedan	2444	206	2650	3265	Sed. Patric.	3438	302	3740	4190
Sedan, Del., 4d	2102	193	2295	3705	Sedan, 4d, 6p	2417	187	2604	3585	Sedan, 4d	2542	213	2755		Cpe. Carib.	4804	406	5210	4265
Riviera Cpe.	2343	210	2553	3815	Sportman	2857	221	3078	3845	Traveler, 4d					Sed. Derham.	6037	494	6531	4335
Conv. Cpe.					Stat. Wagon	3018	233	3251	4080	DeLuxe					Sed. Exec.	6381	519	6900	4650
Super 50					Sedan, 4d, 8p					Club Sedan	2267	192	2459	3150	Lim. Corp.	6567	533	7100	4720
Rivra. Cpe., 2d	2387	224	2611	3845	Firedome 8	2433	188	2621	3655	Sedan, 4d	2317	198	2513	3200					
Rivra. Sed., 4d	2466	230	2696	3905	Club Coupe	2453	190	2643	3720	Traveler	2315	204	2619		PLYMOUTH†				
Conv. Cpe., 2d	2751	251	3002	4035	Sedan, 4d, 6p	2685	207	2892	3740	Dragon					Cambridge	1480	117	1597	2686
Est. Wagon, 4d	3149	281	3430	4150	Sportman	2891	223	3114	3990	Hardtop	3628	296	3924	3320	Coupe, 3p	1895	149	2044	3129
R'dmaster 70					Conv. Cpe.	3111	240	3351	3995						Suburban	1582	125	1707	2943
Rivra. Sed., 4d	2971	283	3254	4100	Stat. Wagon	3276	253	3529	4270	LINCOLN					Club Sedan	1617	128	1745	2983
Rivra. Cpe., 2d	3068	290	3358	4125						Cosmopolitan	3226			4135	Sedan, 4d				
Conv. Cpe., 2d	3205	301	3506	4240	DODGE†					Sport Coupe	3322			4155	Cranbrook	1689	133	1822	2671
Est. Wagon, 4d	3694	337	4031	4315	Midwbrk. Spec.	1816	142	1958	3100	Capri					Club Coupe	1717	135	1852	3023
Skyark Spt., 2d	4596	404	5000	4315	Club Coupe	1855	145	2000	3196	Sedan, 4d	3453			4150	Belvedere	1895	149	2044	3027
					Sedan, 4d					Hardtop	3549			4165	Conv. Coupe	2040	160	2200	3193
					Meadowbrk.					Convertible	3699			4310	Savoy	2028	159	2167	3170
CADILLAC					Club Coupe	1927	150	2077	3085	MERCURY					PONTIAC				
Series 62					Sedan, 4d	1954	152	2106	3175	Custom					Chieftain 6				
Coupe	3295	276	3571	4230	Suburban	2019	157	2176	3190	Sedan, 2d	2004			3405	Sedan, 2d	1788	168	1956	3341
Sedan	3384	282	3666	4225	Coronet 6	1933	151	2084	3155	Sedan, 2d	2057			3450	Sedan, 4d	1843	172	2015	3381
Coupe De Ville	3691	304	3995	4320	Sedan	1958	153	2111	3220	Sport Coupe	2117			3465	DeL. Sed., 2d	1885	175	2060	3356
Conv. Coupe	3830	314	4144	4500	Coronet 8	2039	159	2198	3325	Monterey					DeL. Sed., 4d	1940	179	2119	3396
Eldorado	7196	554	7750		Club Coupe	2059	160	2219	3385	Sedan, 4d	2133			3425	DeL. Catalina	2112	192	2304	3421
Series 60					Sedan	2190	170	2360	3310	Convertible	2244			3465	Cust. Catalina	2174	196	2370	3421
Sedan	3969	336	4305	4415	Diplomat	2314	180	2494	3480	Station Wagon	2591			3765	DeL. Conv. Cpe.	2242	202	2444	3571
Series 75					Sierra	2322	180	2502	3425	NASH					St. Wg., 2 St. Pt.	2248	202	2450	3588
Sedan	4988	420	5408	4630	FORD					Rambler Super					St. Wg., 3 St. Pt.	2329	208	2530	3666
Imperial	5188	433	5621		Mainline 6	1400	122	1522	2977	Suburban	1841	162	2003	2555	St. Wg., 3 St. Gr.	2373	212	2585	3686
					Bus. Coupe	1497	130	1627	3057	Custom					Dix. St. Wg., Gr.	2452	218	2670	3626
					Tudor	1542	133	1675	3105	Stat. Wagon	1951			2119	Chieftain 8				
					Fordor	1846	158	2004	3294	Country Club	1955			2125	Sedan, 2d	1858	173	2031	3421
					Ranch Wagon					Conv. Sedan	1980			2150	Sedan, 4d	1913	177	2090	3456
					Customline 6	1582	137	1719	3067	States'n Sup.					DeL. Sed., 2d	1955	181	2136	3436
					Tudor	1591	137	1728	3046	Sedan, 2d	1966	178	2144	3025	DeL. Sed., 4d	2010	184	2194	3471
					Club Coupe	1628	140	1768	3115	Sedan, 4d	2000	178	2178	3045	DeL. Catalina	2182	198	2380	3496
					Fordor					States'n Cust.					Cust. Catalina	2244	202	2446	3496
					Mainline 8	1471	128	1599	3058	Sedan, 2d	2121	188	2309	3050	DeL. Conv. Cpe.	2312	206	2518	3626
					Bus. Coupe	1567	135	1702	3126	Sedan, 4d	2144	188	2332	3070	St. Wg., 2 St. Pt.	2318	207	2525	3686
					Tudor	1613	138	1751	3171	C.C. Sedan, 2d	2237	196	2433	3095	St. Wg., 3 St. Pt.	2369	211	2580	3756
					Fordor	1917	163	2080	3406	Amb. Super					St. Wg., 3 St. Gr.	2443	217	2605	3686
					Ranch Wagon					Sedan, 2d	2314	207	2521	3410	Dix. St. Wg., Pt.	2448	216	2664	3716
					Customline 8	1662	142	1804	3121	Sedan, 4d	2350	207	2557	3430	Dix. St. Wg., Gr.	2522	222	2744	3716
					Club Coupe	1653	141	1794	3133	Amb. Cust.					STUDEBAKER				
					Tudor	1898	145	1943	3193	Sedan, 2d	2477	218	2695	3450	Champion				
					Fordor	2076	176	2252	3539	Sedan, 4d	2498	218	2716	3480	Custom	1585	150	1735	2690
					Country Sed.					C.C. Sedan, 2d	2602	227	2829	3550	Sedan, 2d	1615	152	1767	2710
					Crestline 8	1941	164	2105	3250	OLDSMOBILE					DeLuxe				
					Victoria	2043	172	2215	3334	DeLuxe 85	2066	196	2262	3603	Sedan, 2d	1675	156	1831	2700
					Sunliner	2203	185	2388	3609	Sedan, 4d	2126	201	2327	3642	Sedan, 4d	1705	158	1863	2735
					Country Sq.					Sedan, 2d					Coupe, 5p	1710	158	1868	
					HENRY J					Super 88					Regal				
					Corsair	1286	113	1399	2395	Sedan, 2d	2189	206	2395	3628	Sedan, 2d	1755	162	1917	2715
					DeL. Sed., 2d	1437	124	1561	2445	Sedan, 4d	2252	210	2462	3673	Sedan, 4d	1785	164	1949	2745
					HUDSON					Holiday	2448	225	2673	3661	Coupe, 5p	1790	165	1955	2700
					Jet	1685	173	1858	2650	Conv. Coupe	2615	238	2853	3905	Convertible	1940	176	2116	2760
					Super Jet	1775	179	1954	2700	PACKARD					Commander				
					Sedan, 4d					Clipper Line					DeLuxe				
					Sedan, 4d					Club Sedan, 2d	2334	210	2544	3700	Sedan, 2d	1910	179	2089	3056
					Wasp	2063	201	2264	3350	Club Sedan, 4d, 6p	2384	214	2598	3730	Sedan, 4d	1940	181	2121	3075
					Sedan, 4d	2106	205	2311	3380	Sperster Cpe.	2577	228	2805		Coupe, 5p	1945	182	2127	
					Club Coupe	2106	205	2311	3340	Clipper DeL.					Regal				
					Super Wasp	2203	210	2413	3460	Club Sedan, 2d	2471	220	2691		Sedan, 4d	2020	188	2208	3095
					Sedan, 4d	2252	214	2466	3480	Sedan, 4d, 6p	2521	224	2745		Coupe, 5p	2025	188	2213	3040
					Club Coupe	2252	214	2466	3455	WILLYS					Land Cruiser	2120	196	2316	3180
					Hollywood	2573	239	2812	3525	Aero Lark, 2d					Convertible	2175	199	2374	3120
					Conv. Brghm.	2792	256	3048		Aero Lark, 4d					Aero Falcon, 2d	1500	146	1646	2487
					Hornet					Club Sedan, 2d	2471	220	2691		Aero Falcon, 4d	1580	152	1732	2507
					Club Coupe	2505	237	2742	3530	Sedan, 4d, 6p	2521	224	2745		Aero Ace, 2d	1640	156	1796	2507
					Sedan, 4d	2529	240	2769	3570	Clipper DeL.					Aero Ace, 4d	1700	161	1861	2529
					Hollywood	2833	262	3095	3610	Packard Line					Aero Hardtop	1800	163	1963	2585
					Conv. Brghm.	3061	281	3342	3760	Sed. Cavr., 4d	2975	269	3244	3975	Aero Wagon	1980	182	2162	2575
										Cpe. Mayfair	3006	272	3278	3905	Sta. Wg., 4 cyl.	1705	157	1862	2818
															Sta. Wg., 6 cyl.	1786	163	1949	2850

† Prices do not include delivery and handling charges.

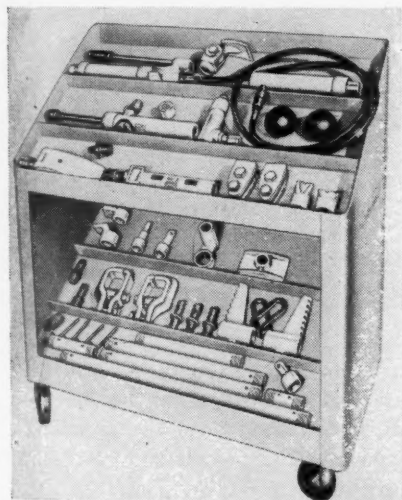
New

PRODUCTS SHOW WINDOW

FOR FURTHER INFORMATION USE POSTCARD FACING NEXT PAGE

442. Body Tools

Blackhawk Manufacturing Company: Porto-Power assortments, being introduced by Blackhawk, incorporate the latest developments in hydraulic equipment for mechanical repair as well as body rebuilding. The No. AZ-10 "Super Bantam" assortment includes a



Bantam push ram, pull ram, spreader, plus all the attachments to completely equip body mechanics for general sheet metal repair. A white metal stand is included, which wheels the tools right to the job. The FZ-11 is an assortment of 10-ton Porto-Power equipment especially selected for mechanical work.

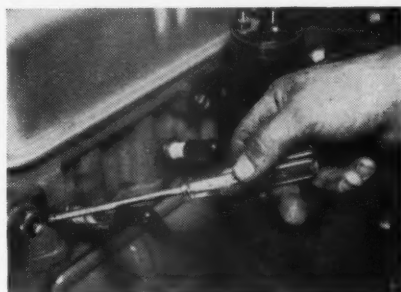
443. Grease Gun

National Sales, Incorporated: Air pressure is used with the hand operated grease gun in the new Super Heavy Duty Gre-Zer-Ator, a portable greasing unit manufactured by this company. The complete unit is easily fastened to the

top of a regular 25 to 50 pound original refinery grease container. With the Hydrajet Pump, power is obtained from a sealed unit of compressed air without the use of air or electrical connections. A few downward strokes on the cushioned air cylinder will provide sufficient pressure even when the unit is equipped with an extra long hose. Depending on the weight of the grease, the Hydrajet Pump will hold from 10 to 16 ounces.

444. Plug Tester

May Brothers Manufacturing Company: The E-Z Spark Plug Extension is a new device for testing spark plugs. The new product fits all plugs equipped with rubber caps. It prevents puncturing the rubber to make contact, and saves



the bother of placing an extra wire under the rubber cap to get a contact point. The E-Z Spark Plug Extension can also be used for timing motors, motor tune-ups and so forth.

445. Electrical Servicer

Allen Electric and Equipment Co.: A Regulator-Generator Servicer, identified as Model E-1256, containing all necessary instru-

ments and tools to do complete testing and overhauling of both 6 and 12-volt passenger car generators and regulators has been



developed by Allen. The Allen Servicer has all integral equipment compactly assembled on an attractive and sturdy bench, and arranged for easy accessibility to all units. The instrument and control panel is inclined for maximum visibility, and convenient control knobs and switch positions permit instantaneous selection of either 6 or 12-volt test circuits. The E-1256 requires a floor space of 48 in. by 21 in.

446. Windshield Wiper

Scott Paper Company: Especially designed to meet the wiping and cleaning needs of any service station or garage, a new automotive windshield wiper has just been developed and placed on the market by this company. In addition to windshield cleaning, it can be used with equal success in a

lube room, for car polishing, crank-case service and dipstick tests, hands and face washing or for any other cleaning job that must be done around a shop. The new tissue will not scratch, lint or smudge and is said to do a real job on headlights, tail lights, and even on station display windows. It can be used for a lube job and to wipe the steering wheel after lubrication. Each box retains the special Scott "Pop-up" feature that makes another wiper available the instant one has been removed from the container.

447. Flaw Finder

Met-L-Chek Company: The visible Penetrant Dye inspection process finds defects in all metal, glass and plastic surfaces. Met-L-Chek Dye is water washable—readily moved from the work and workman's hands without special solvents. It is claimed to find fatigue cracks in axles, front wheel spindles and steering gear; it will also find cracks in gears, cylinder heads, pistons, and so forth.

448. Muffler Rack

Goerlich Company: Called the D-507 Muffler Merchandiser, Goerlich's new rack displays four mufflers and holds eight additional packaged mufflers in stock. Made



of extra heavy gage wire, the merchandiser is sturdy, will not rust and has two wheels at the base which allows the merchant to push the rack to any location. The rack is 20½ inches wide, 24½ inches deep and 52½ inches high.

449. Wrecker

Ernest Holmes Company: The Junior Wrecker is a service unit which can be used on a ½ ton truck. It is especially adapted to work in congested areas, because it is small in size, easily handled in traffic and can be maneuvered into any space that a passenger



car will go into. The wrecker has a capacity of 3 tons, which is ample power for handling the average car. The Holmes Junior weighs 687 pounds and when installed on a small pickup truck can be used either as an independent unit or as an auxiliary to a larger wrecker. The wrecker has two-speed operation. The service drum is equipped with 50 feet of ¾ inch cable; 100 feet cable may be used if desired.

450. Grease Remover

Petroleum Solvents Corporation: Petisol 404 Degreaser Concentrate, a new formulation for the removal of grease and grim from metal parts, engines, truck and bus bodies, chassis, concrete floors, and so forth, is now available. The solvent is supplied in concentrate form and is diluted by the user with readily obtainable, inexpensive mineral spirits. It is said to be fast acting, thorough and economical to use. The manufacturer states that it has no offensive odor, is harmless to metal and is non-injurious to the hands or skin.

451. Intercoms

Vocaline Company of America, Incorporated: Known as Vocatron Standard and Vocatron Long Range, the new models offer important advantages for all type of multiple service operations. They make intercommunication easy between office, showroom and service department or between service department, body shop, paint shop, used car department and the various parking floors. The unit can be easily carried

about and plugged into any standard electrical outlet for communication over lighting circuits. No additional wiring is required. The Long Range model comes equipped with an extra tube, a pilot light and a carrying handle. Both models have new noise-suppressing circuits and have Underwriters Laboratory approval.

452. Free Booklet

Fram Corporation: The Fram Corporation announces the publication of a free, illustrated booklet, "Cooling System Facts." Since American motorists spend more than \$100,000,000 each year on



cooling system repairs, cooling system protection is becoming increasingly important. "Cooling System Facts" show how auto water-cooling systems operate and explains how the Fram radiator and water cleaner solves cooling system problems.

453. Road Sander

Tenna-Lite Corporation: A new "push button" electronic sander for individual automobile and light truck installation is said to provide instant traction between tires and icy roads. For traction on ice, the driver touches a dashboard switch which electrically operates solenoid valves in twin grit hoppers installed near the rear wheels. Specially prepared grit is released through self-ventilating, non-freezing nozzles in front of the wheels to provide instant traction at the point where

(Continued on page 136)





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10/53

Please send me further information on the New Products, the code numbers of which I have circled below.

- | | | |
|--------------------------|----------------------|-----------------------|
| 442. Body Tools | 450. Grease Remover | 457. Motor Oil |
| 443. Grease Gun | 451. Intercoms | 458. Battery Charger |
| 444. Plug Tester | 452. Free Booklet | 459. Service Manual |
| 445. Electrical Servicer | 453. Road Sander | 460. Air Jack |
| 446. Windshield Wiper | 454. Oil Pan Gaskets | 461. Cuff Links |
| 447. Flaw Finder | 455. Radiator Test | 462. Distributor Tool |
| 448. Muffler Rack | 456. Fluid Dispenser | 463. Oil Filter Lines |
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Current Engine and Tune-up Specifications

Chilton

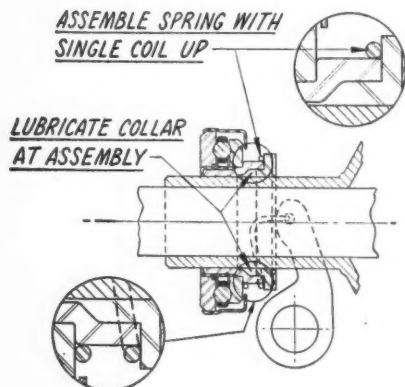
Service Suggestions

From the Factories

Insert Release Collar Spring With Single Coil at Top

For proper operation of the clutch throwout collar assembly on the transmission front flange the release collar spring must be installed in the proper position on Studebaker cars.

The illustration shows the proper position. The spring, as shown, has one-and-one-half coils. The spring should be installed with the single coil at the top of the collar and the double at the bottom. When



installed in this way, the bearing and collar are held in proper relationship, eliminating any binding of the collar on the flange and also eliminating spring breakage.

Whenever the clutch throwout bearing assembly is removed from the transmission flange coat the inside of the throwout bearing sleeve with a high melting point grease.

Water Leaks on Headlining Caused by Opening in Seam

If water leaks under the rear seat or onto the headlining on Plymouths, it may sometimes be due to openings in the seam above the drip rail which cannot be seen by

visual inspection. In such cases, the opening can be found by the following method.

Take a thin strip of shim stock or a piece of stiff paper and bend a 90 degree offset approximately $\frac{1}{8}$ of an inch from the end. Run the edge of this offset under the sealer on the seam between the drip rail and the panel.

Seal any openings with a hand-type caulking compound.

Cylinder Bank Temperature Affected by Thermostat

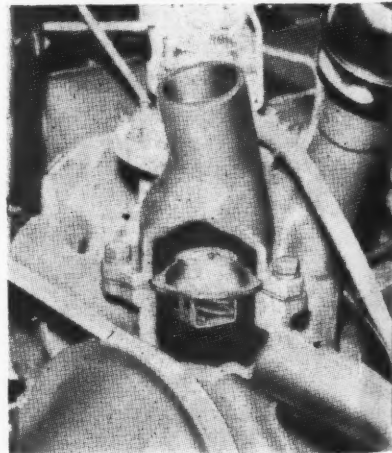
Tests on late model Cadillacs have shown that the position in which the cooling system thermostat was installed affects relative temperature of the two cylinder banks.

The strap beneath the thermostatic spring can restrict water circulation if installed crosswise in the engine, causing the right hand cylinder bank to run somewhat hotter than the left hand bank. This increases the possibility of detonation and preignition in those cylinders where temperatures are higher.

When the thermostat is installed with the strap running fore-and-aft in the engine, the water circulation is not restricted, and the temperature of the cylinder banks is more equal. Thermostats have been in-

stalled in this manner in all 1953 cars built after Engine Number 06840.

It is advisable to install all thermostats in 1949 through 1953 engines with the thermostatic spring strap running fore-and-aft, whenever a thermostat is removed for service operations.



Since the strap is on the lower side of the thermostat, it will be helpful to notice the relation of the strap to the upper side. On the butterfly type thermostats, the only type currently used for late model service replacements, the valve pivot axis is parallel to the lower strap and should therefore be placed fore-and-aft.

(Continued on page 123)



Read what Wall Street Journal says about Studebaker

Please Turn to Page 1, Column 1

Detroit Studies Sales of "Continental" Studebaker

By a WALL STREET JOURNAL Staff Reporter

DETROIT—Studebaker, which was a big factor in setting early-postwar auto styles, may now be setting the pattern for the next few years.

Its 1946 model, designed with lavish use of glass by Raymond Loewy, was the first completely redesigned postwar car. The South Bend, Ind., concern made no further major change until its current 1953's; with these it introduced low, rakish "Continental" styling. Also designed by Loewy, the new model cost \$27 million to introduce, double the 1946 cost.

A top Detroit stylist, employed by a rival manufacturer, says that the current Studebaker will affect the future looks of more competitive makes than the industry would like to admit. Most frequently-cited

Front page story from Wall Street Journal



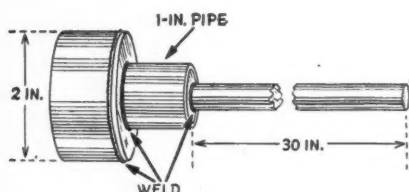
Shop Kinks

If you've come upon an original idea for making a job easier, a special tool, short cut on a job or any trick of value to other readers, write it down and if necessary, make a rough sketch. Just make it clear. Send it to Motor Age. If we can use your Kink it may bring seven-fifty, possibly 25 dollars. All submissions become the property of Chilton Company. Because of the numbers received, no entries can be returned.

For The Best Kink Published Each Month . . . \$25
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Tool Made of Pipe Drives Front Pulley on Chevrolet

This tool is made especially to drive front pulleys on Chevrolet motors, while the motor is in the car, after installing front oil seal, etc. It is made of one inch of a one

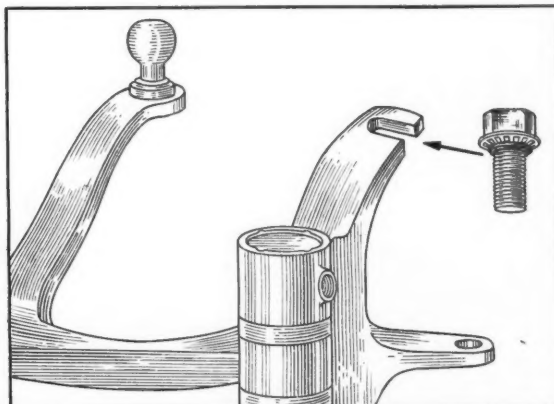


inch pipe and one inch of a two inch pipe, which are welded together with a $\frac{3}{8}$ inch shaft, 30 inches long. The two inch pipe clears the notches of the crank. *Milton Rosdail, Storm Lake, Ia.*

Welding Mounting Nut Aids Installing Master Cylinder

Considerable time is saved in replacing the master cylinder on all Chryslers from 1937 to 1942. After the cylinder is cleaned, but before it is honed or reassembled, use two short $\frac{3}{8}$ inch SAE bolts that won't quite reach through the nuts that hold the cylinder. Put these bolts through the two mounting holes and place the mounting nuts up snug, then tack-weld the nuts in place on the cylinder and remove the bolts.

Best Kink of the Month



Short Cut For Installing Steering Arm

In order to cut time in half when installing a Chevrolet intermediate steering arm, first install the cap screw in the cross member with a rubber band to hold up the lock washer. Install the bolt part way, then install the center control arm with the whole cut out on the right side. *Thomas J. McNally, Ross Chevrolet, 293 Ninth Street North, Saint Petersburg 2, Florida.*

This puts the nuts in position when the cylinder is put in place.

The use of short bolts prevents welding spatter from getting in the threads and making bolt removal difficult. *Stanley Clark, E. Bradenton, Fla.*

Shift Rod Strikes Bracket On De Soto Power Steering

We have run into considerable difficulty in adjusting the shift linkage on a 1953 V-8 De Soto with power steering, (even after all parts have

(Continued on page 76)

Insure engine overhauls

WITH GENUINE

Perfect Circle **NURLIZING**

- * Eliminates piston slap
- * Closer piston fit without scuffing or scoring
- * Better piston lubrication
- * Fast... accurate... economical... permanent

Perfect Circle Nurlizing . . . the original knurling method of resizing and resurfacing worn pistons . . . makes worn pistons like new again at only a fraction of the cost of replacing them! Be sure to specify Nurlizing on every engine overhaul!

NO OVERHAUL IS COMPLETE WITHOUT PERFECT CIRCLE

NURLIZING

Beware of imitations!



been set to factory specifications) to allow a smooth shift into the reverse position. We have found the correct answer.

When the gearshift lever is raised towards the steering wheel to start the reverse shift, the lower level on the shift rod strikes the lip of the U-shaped bracket welded to the steering mast jacket. This restricted movement does not allow the selector to move enough to complete the shift.

The lower rod lever is a two piece spot welded affair and apparently a number of them have been poorly aligned when welded. We merely ground the protruding part to allow enough movement. *R. A. Mesler, Wilkerson's De Soto-Plymouth, Tulsa, Okla.*

Hole in Fender Pan Removes Broken Rear Manifold Stud

To drill out a broken rear manifold stud on a Nash Rambler, first cut out a six inch square hole, with a chisel or a torch, in the inner fender pan in line with the broken stud. This will enable you to use a small hand drill and short bit. The hand drill can be worked through the opening. Otherwise, it is necessary to remove the engine to drill the stud out. When the job is completed, use a piece of metal and four metal screws to cover the opening. *Fred Shattack, J. Jack Fisher, Nash Dealer, 6311 Germantown Ave., Philadelphia, Pa.*

Easy Way to Renew Timing Case Oil Seal on Chrysler

When renewing the timing case oil seal on Chrysler V-8 engines, the factory states that you must remove the starter, exhaust crossover pipe and oil pan, but I have found a way to get around this long drawn-out affair.

Remove the necessary parts for a case removing job, less the above things, and the timing case and water pump. Remove the bolts inside the water pump that hold down the case. Near the bottom of the case are two dowel pins; drive them

into the block flush and lift the timing case off, being careful of the pan gasket.

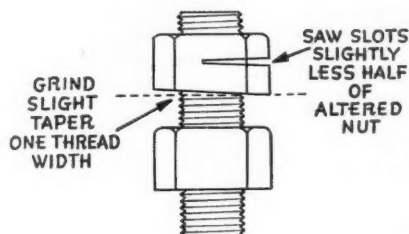
After the case is off, put a magnet into the oil pan near the front main bearing, being sure that the crankshaft balance is on the opposite side of the magnet. Then drive the dowel through and it will fall on the magnet. Move the crankshaft balance to the other side, then drive the other dowel pin out.

When you renew the case on the job drive the dowel pin into the case after all the timing case bolts are started in place. If you rip the pin gasket end you can make some from another gasket.

This is also good for camshaft and timing chain jobs. *John M. Austin, 1501 South Brodd St., Pleasantville, N. J.*

Nut Made for Stud Remover To Work in Tight Places

Sometimes a regular stud remover is too cumbersome to get in a tight place. Alter one nut, according to the drawing, and use the unaltered nut to back up against it and the stud will come out with a



socket or wrench. I have found this useful on older Chrysler products where there is a longer than usual stud used on the water pump and where there is not enough room to use a regular puller. *R. Vernon Fuller, Foreign and Domestic Auto Repairs, Box 1652, Daytona Beach, Fla.*

Bevel Edges of Brake Shoes To Stop Soft Pedal Brakes

Spongy brakes, whether hydraulic or mechanical, are sometimes caused by ill fitting shoes to drums. All brakes have a tendency to wear

the drum tapering to a smaller width as the depth increases. When new proper width lining is installed, the sharp edges contact the beveled wear of the drum and cause soft pedal. I always bevel the edges of the newly lined shoes slightly, and in that way the customer does not have to run-in his soft pedal brakes and, consequently, come in later for free adjustments. *J. E. Black, 16 Lakeside Court, Sumter, S. C.*

Generator End Plate Used As Fixture to Fit Brushes

When installing new generator brushes in General Motors' 1952 models you will find that fitting brushes to the arc of the commutator presents a problem because the brush holders are fastened to the frame and not to the end plate, as in previous models.

To insure a good brush fit, take an end plate, with brush holders attached, from a previous GM model generator and use this as a fixture to fit the brushes.

With the end plate on the armature, slip a piece of commutator sandpaper 2/0 grit, 1 inch by about 18 inches long, sanded side up, on the commutator. Put a new brush in the holder and draw the paper carefully in the direction of the closed side of the brush holder with a downward motion to conform to the arc of the commutator. A couple of passes will be sufficient. The brushes will be ready to install in the frame of the 1952 generator. *Bernie Schwartz, Standard Auto Parts, 1700 Webster Ave., Bronx, N. Y.*

Designed Adjusting Wrench For Chevrolet Truck Clutch

On 1947 through 1953 Chevrolet trucks, I've found it extremely difficult to adjust the clutch linkage due to the fact that the left motor mount and exhaust pipe are directly below the adjusting nuts, making it impossible to use a regular clutch adjusting wrench. I've designed a tool that allows one to work in front or back of the clutch housing, leaving plenty of space to turn the adjusting nuts. *Lloyd Curl, Rapid Chevrolet Co., Rapid City, South Dakota.*

*AC is the Only Spark Plug
that has this Ready-Made
Replacement Market*

**Factory Equipment
on Nearly as Many
New Cars as All Other
Makes Combined**

AC

**SPARK
PLUGS**



**Now available
for ALL makes and
models of cars,
trucks and tractors**

*And AC is the Only Spark Plug
with Patented CORALOX Insulator*

NADA Faces Future . . . Continued from Page 41

scope, and in importance to the overall economy of the nation, so has NADA grown. The progress of NADA, as an effective medium for bringing about good for dealers and the industry alike, has been steady and continuous.

There are reasons behind the progress of NADA.

First of all, NADA belongs to the dealers of the country.

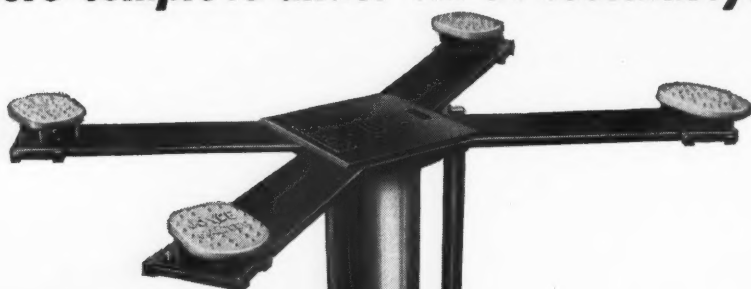
Through its numerical strength and its unified spirit NADA, as a part of the American private enterprise system, has grown strong and important. Its services through the years have been based upon benefits to its dealer members, to the automotive industry, and our customers, the motoring public.

As thousands of dealers from

all over the country gather in Miami Beach for the Convention in January, the every day problems which are currently affecting their operations will be brought into strong focus through the NADA Convention Program. Business sessions and clinics on practically all phases of dealer management are being developed, with some of these features being presented by nationally known speakers and others being developed as presentations by NADA Committees which are at work throughout the year on the respective problems assigned to them.

The National Automobile Dealers Equipment Exhibition, which is presented concurrently with the NADA Convention, is itself a top-ranking attraction which alone would justify a dealer's attendance. Here will be exhibited the newest in shop and office equipment.

NEW JOYCE X-MASTER FRAME LIFT *offers complete under-car X-cessibility!*



FOR FAST LUBRICATION WORK



FOR EFFICIENT UNDER-CAR SERVICE

**X-MASTER LIFT
HAS EVERY
DESIRABLE
FEATURE!**

Greatest X-cessibility to all lubrication and under-car service points, because X-frame coincides with part of car frame that requires no service.

Easy to use . . . one setting accommodates over 90% of automobiles . . . efficient working height, full 66" lift rise.

Removes body weight from wheel suspensions to allow free flow of lubricants for best lubrication . . . ideal for tire work.

Quick car spotting . . . Frame Contact Pads also spring actuated Wheel Guides, accurately guide wheels to wheel locator.

A universal lift . . . ideal for lubrication, service and repair work. Available in eight models . . . full or semi-hydraulic . . . air or electrically operated.

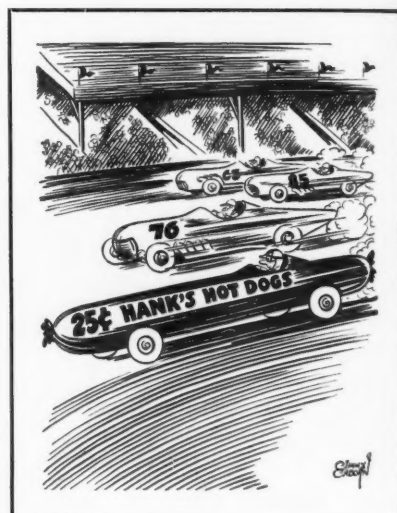
**WRITE FOR COMPLETE
INFORMATION, TODAY!**

**JOYCE
LIFTS**

THE JOYCE-CRIDLAND COMPANY

Designers and Builders of Lifting Equipment Since 1873
DAYTON 3, OHIO, U.S.A.

IN CANADA: MIDLAND FOUNDRY & MACHINE CO., LTD., MIDLAND, ONTARIO



While the annual Convention is a highlight of the year, NADA services continue to flow to our members throughout the calendar year.

I appreciate this opportunity to point out that the value of NADA membership and services to dealers cannot always be measured by annual dues figures. While most of our services are specific and definite, and reach the dealer's desk in the form of special bulletins, releases, a monthly magazine, etc., it is true also that much of what NADA does for its members is intangible. The intangible

(Continued on page 80)

AVOID THIS



WITH THIS!

**ORDER FROM
YOUR JOBBER
NOW!**

E. EDELMANN & CO., CHICAGO, ILLINOIS U. S. A.



**GET YOUR
Edelmann 900-TV
FREEZ-D-TECTORS
TODAY!**

NADA Faces Future . . . Continued from Page 78

is not easy to measure, but I can assure every member that the things NADA does in representing and protecting their interests are of prime importance always.

I believe our Association has moved forward because our leaders through all the years have been alert to dealer needs. I believe also our progress has been

a part of the courage and faith of all who have led and belonged to NADA.

Even as courage and faith are a part of progress, sound business practices are a by-product of progress. The business biography of every dealer, who has been successful through the years, will show that his business philosophy

and his operational procedures are based on sound business practices.

As president of the National Automobile Dealers Association, I have sought in all that I have done and said to bring about a dealer consciousness of the importance of sound business practices. I know that the retail automotive industry will continue to move steadily forward as it incorporates the best experience of the past into its operations and as it continues to grow in stature to meet the developments and challenges of tomorrow.

NADA is dedicated for this great and good purpose. It must be kept strong to do its job more effectively for all of us.

NADA Committee Initiates Tax Information Program

A grass-roots campaign to create greater public awareness of the high and discriminatory taxes levied against essential automobiles and trucks is being planned by the National Automobile Dealers Assn. as a nationwide activity.

The tax information program was adopted by the Association's Executive Committee during its meeting in Washington, over which President Robert S. Armacost presided.

Discussions in the two-day session centered around current operating problems of new car and new truck dealers.

Continued high production is regarded by many dealers as the major factor in bringing about unsound and profit-dissipating sales practices in many areas of the country within the last few months. Such a trend can be averted, the committee added, by dealer use of sound business practices, and a program emphasizing these points is being developed by NADA's Industry Relations Committee.

Frederick M. Sutter, chairman of the Industry Relations Committee, reported that the program of electing members of National "Make" Advisory Committees is nearing completion, and that facilities are being set up at the Miami Beach Convention in January for meetings of the 16 "Make" Committees.

Make V-8 valve grind jobs Pay Off and Get a Double Profit by Installing **JOHNSON** adjustable tappets



It's easier to sell tappets when the head is off. And you can make a double profit with less work by recommending Johnson Adjustable Tappets with your valve grind jobs. During a valve grind, lift out the old tappets and slip in Johnson Tappets. As simple as that you can make this double profit and save the hard work of grinding off valve stems.

Your customer is better satisfied because you can adjust Johnson Tappets to give him a smoother, quieter engine. Adjustment is simple. Special spanners included with each set of tappets leave both hands free to make faster, more accurate adjustments. Once you've set the patented self-locking screw, Johnson Tappets will maintain the setting.

There's more profit for you if you sell Johnson Adjustable Tappets with every Ford and Mercury V-8 valve grind. Order a supply of Johnson Tappets today.

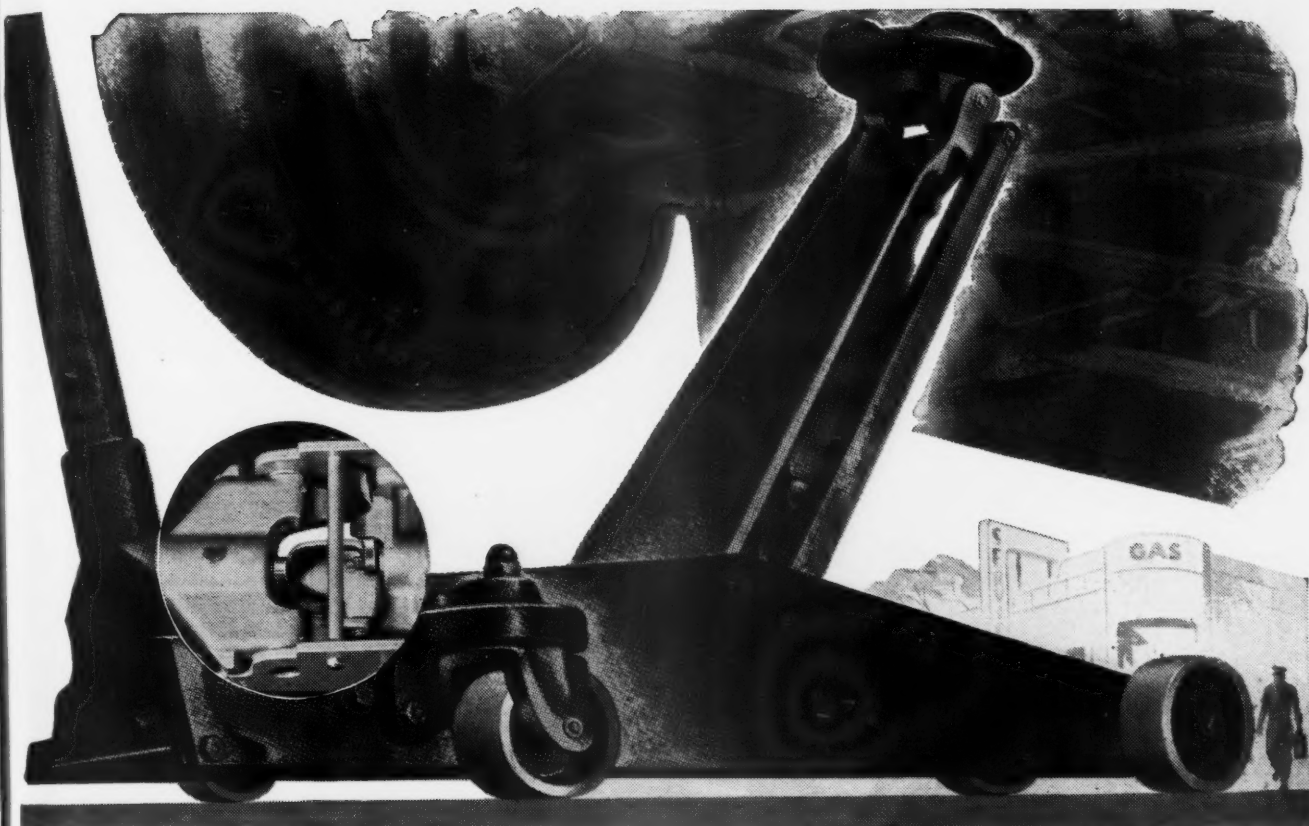
SEE YOUR JOBBER!

"Tappets Are Our Business"

JOHNSON  PRODUCTS

INC.

MUSKEGON, MICHIGAN



say goodbye to **HT-Z*** Hydraulic Trouble Zone
and all other jack troubles...

with the ALL-NEW AUSCO 2-TON service jack

Ausco's exclusive ALL-NEW release mechanism eliminates the *Hydraulic Trouble-Zone* which so often causes service jack failure. This new release does away with H T-Z* by eliminating troublesome universal joints, screws and gears. Instead, the Ausco release operates with a simple cam-and-rocker action, similar to the overhead valve system in an engine. To bring down the lifting arm—in any position—just give a twist of the knob!

And that's only part of the story! The ALL-NEW Ausco

2-ton Service Jack is the simplest, easiest-to-use jack that ever did your lifting jobs. Low, rugged body positions easily under lowest-slung cars, yet won't "hang up," even when dollying cars on uneven floors. This 2-ton lifts the load *higher* for added workspace . . . raises the load *faster* even where handle movement is restricted.

Let your Ausco Jobber show you all 26 ALL-NEW SERVICE FEATURES . . . meet this ALL-NEW AUSCO 2-ton and say good-bye to H T-Z*!

MORE for your money with AUSCO!

MORE Service Life . . .

Exclusive, Faster-Acting Release Mechanism! Simple cam-and-rocker arm action eliminates usual hydraulic trouble-zone!

New Pump with Exclusive Ausco Drive Mechanism! Extra tough metal cover and new cartridge-type wiper keeps dirt out of the pump.

MORE Lifting Height . . .

New Higher Lift with New "Dished" Load Rest! Lifts load 24½ inches. Makes under-the-car jobs on new low-slung models easier. "Dished," self-leveling, malleable load rest is saucer-shaped and rotatable for faster positioning.

MORE Floor Clearance . . .

Newly-Designed Body! Additional floor clearance eliminates "hang-up" — helps protect pump from damage. Wider (14 inch) chassis for greater stability.

MORE Ease and Speed in Positioning . . .

New Extra-Long, Extra-Rugged Chassis (42½")! Large 4" front wheels and rear bearing-equipped swivel wheels for easier dollying and free handle operation under cars with low overhang.

MORE Precise control . . .

New Handy Foot Control! Locks handle at 45° — makes it easier to position jack under load.

Direct-Action Control Closes Release Valve! No delicate handle positioning, release valve closes when action is started by turning handle grip.

New, Constant Direct-Line Power! Speeds up lifting action and eliminates lost motion.

MORE Safety . . .

Safety Valve Assures Greater Service Life! Overloads are refused by cut-out valve action set at rated capacity, thus protecting all integral working parts.

AUSCO Jacks

AUTO SPECIALTIES MFG. CO. Dept. MA-10, ST. JOSEPH, MICH. Other Plants Benton Harbor and Hartford, Mich., Windsor, Ont., Canada

Where Else, but Here . Continued from Page 45

Next three problems—designing the building, having it built and finding a place of business in the meantime. He took the latter first, and used his typically American ingenuity. He had a lot, but no shelter. He couldn't wait until the new building was put up to start in business, so he had to improvise. Someone jokingly mentioned

that Bob should have a "big-top"—a circus tent. It turned out to be no joke, for the next week D'Andrea Ford was in operation with the service department in a huge tent on their vacant lot and the office in a little shack that was hastily erected. D'Andrea worked out of these quarters from December, '52, until last April.

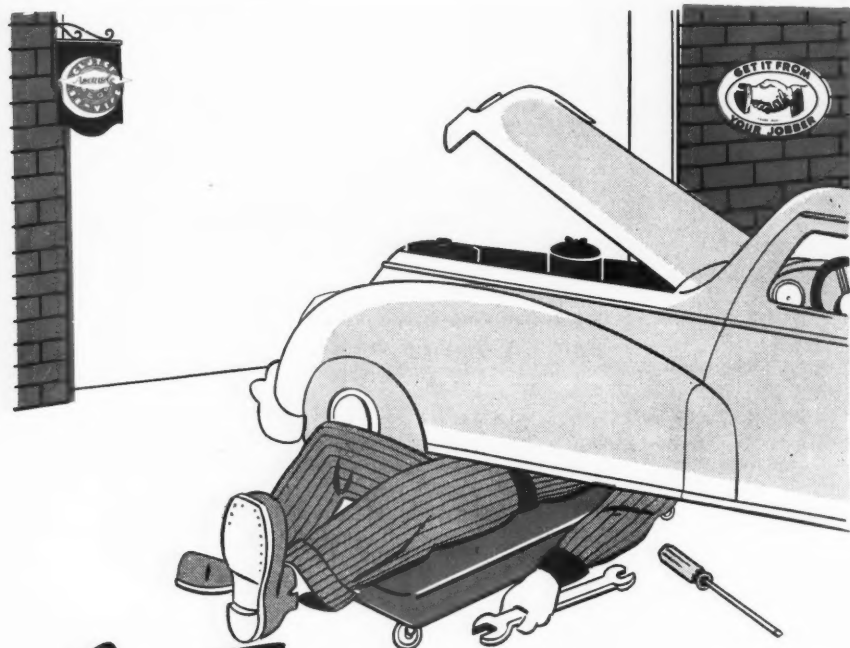
Obtaining competent personnel was a real headache in a town of 8,000 population, especially when there was that cool feeling toward the new dealer. Bob did manage to hire a service manager from Aberdeen. His parts manager was imported from out of state, as were most of his five mechanics. Two salesmen were hired, one from Aberdeen and one from Baltimore. The office work, except for the bookkeeping, was and still is in the able hands of his wife.

His wife—Bob's right arm! From the moment that he made that momentous decision on the phone, he knew that she would be behind him one hundred percent. Even the disappointment of dropping the plans for their long-awaited home was accepted graciously by Mrs. D'Andrea, who has worked right by her husband's side since the idea first unfolded. Behind most successful car dealers, you'll find an enthusiastic and hard-working First Lady, such as Mrs. D'Andrea.

The D'Andrea Ford building was designed completely by its owner. Bob knew what he wanted and considered his ideas uncomplicated enough not to require the services of an architect. He sketched out his plans and presented them to a builder in Baltimore. The arrangement was to have the building put up on a five-year rental basis, with D'Andrea having first option to buy at the end of that time. Everything was going along smoothly and it looked as if construction would soon be under way when the builder, D'Andrea and an attorney from the Ford Motor Company had a final meeting on the subject of building. At this time, the builder threw in an extra stipulation which stopped negotiations immediately.

This was when Ford thought that Bob had taken on more than he could handle. They suggested that he quit while he was ahead, since it seemed that things weren't going his way. Bob asked for just another 24 hours and he was sure that he could straighten out the

(Continued on page 98)



Less Time ON YOUR BACK

Clutches are installed faster when you use a Powerflex clutch plate. Because splined transmission shaft is inserted thru pointed, self-aligning hub splines much easier. Saves time. Prevents burred splines, bent plates. Powerflex plates are built to make it easy for the repairman.

Exclusively Accurate!

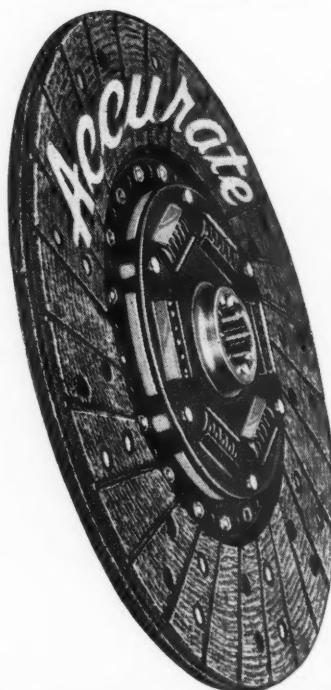
Only Powerflex plates have these self-aligning splines; flat-top cushions; spring supports; safety stops.



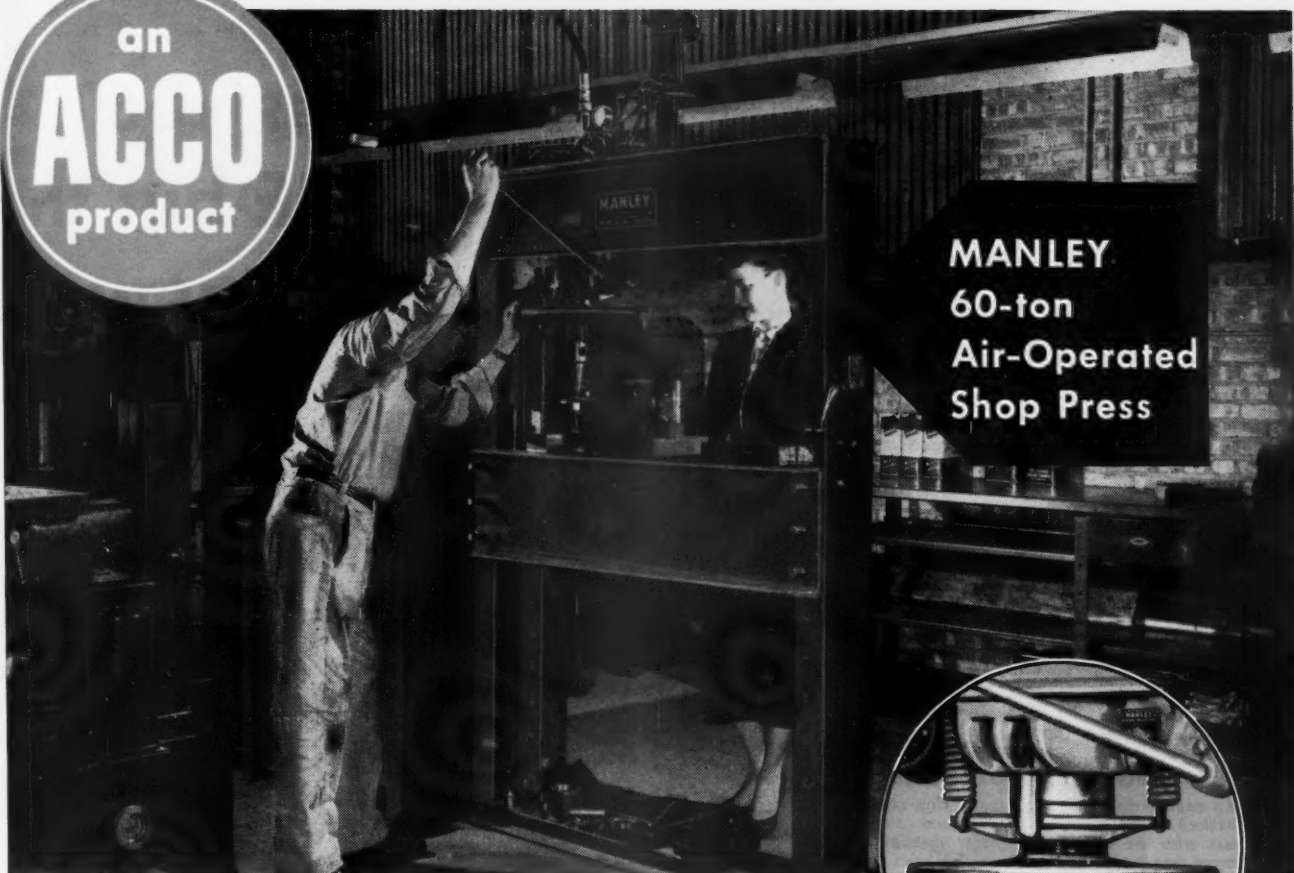
New POWERFLEX Plate
in every
Accurate Clutch Set

Accurate

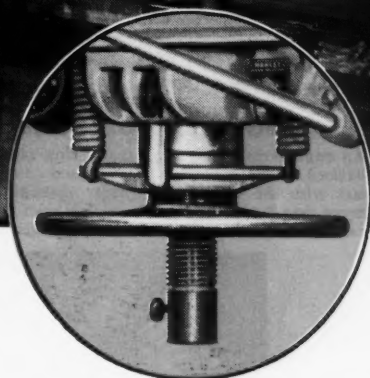
PARTS MANUFACTURING CO.
12435 EUCLID AVENUE • CLEVELAND 6, OHIO



an
ACCO
product



MANLEY
60-ton
Air-Operated
Shop Press



MOVABLE HEAD...
travels on rollers

Maybe you are Paying for a MANLEY Shop Press...

• Every time you have to send a pressing job out of your shop, it costs you money that could help pay for a new MANLEY Shop Press. Just stop and think of the time it takes to send jobs out. And time is money.

The MANLEY Air-Operated Hydraulic Press illustrated above was designed for use in garages, service stations, and machine shops. The only hook-up required is piping to a 150-lb. air line. In case of air failure, you operate the press by hand.

The new self-locking table is a real safety feature. Adjustable pump handle and improved table cranking mechanism make the MANLEY Press easy, fast, and safe to operate. New finely graduated depth gauge and constant speed ram provide precision control.

MANLEY makes a complete line of shop presses
in 25, 40, 60, and 80-ton capacities, both manually
and air operated. See your MANLEY jobber today
or mail coupon.

The Best Equipped Shop Gets the Profitable Business

ACCO



York, Pa., Chicago, New York, Portland, San Francisco, Bridgeport, Conn.

MANLEY DIVISION
AMERICAN CHAIN & CABLE

In Canada: **Dominion Chain Company, Ltd.**
Niagara Falls, Ontario

MAIL TODAY!

MANLEY DIVISION
American Chain & Cable
York, Pa.

MA

Please send literature and prices of
___ 25-Ton, ___ 40-Ton, ___ 60-Ton, ___ 80-Ton MANLEY
Hydraulic Presses, and name of nearest distributor.

Name _____

Address _____

Town _____

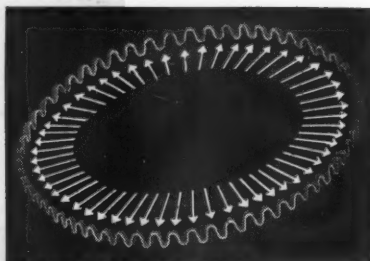
State _____

Pedrick FORMFLEX gives you not only CHROME but the exclusive "EQUALIZER" as well!



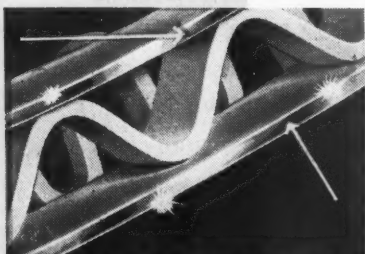
AMAZINGLY CONFORMABLE

An engineering test shows that a ring rail backed by the "Equalizer" maintained contact with the wall of a cylinder through more than 5 times greater distortion than a rail backed with a hump-type expander!



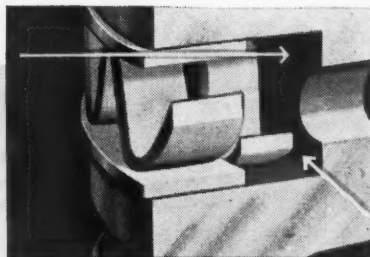
UNIFORM PRESSURE

The ends of the "Equalizer" butt, compressing it into the cylinder, squeezing each of more than 50 bends and producing absolutely uniform pressure around the entire circumference . . . no high or low pressure points.



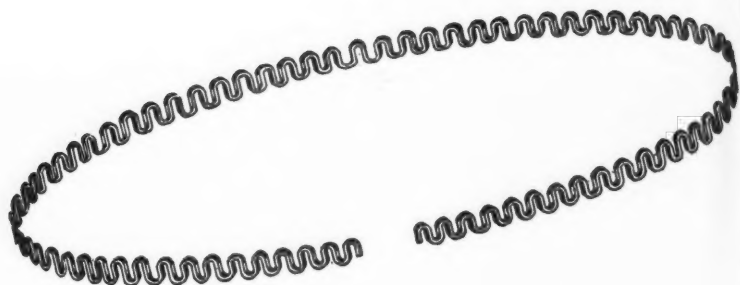
CHROME FOR LONGER LIFE

Faces of the two flexible steel rails are hard chrome plated for 2 to 4 times longer life.

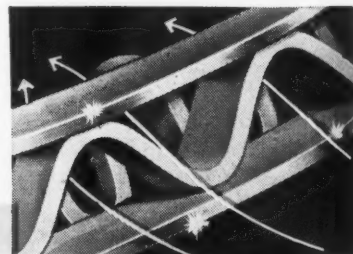


GROOVE-DEPTH FREEDOM

The "Equalizer" does not rely on pressure against the groove bottom for its tension, eliminating the problem of variations in groove depth which affects the efficiency of hump-type expanders.



The Pedrick "EQUALIZER" is completely different from old-fashioned hump-type expanders. It contacts the ring rails all the way around, not just at 7 or 8 humps. It is a sensational development in expander design, operation, performance and life. The soft, uniform and positive tension it exerts at every point of the cylinder wall assures a far better seal under extreme conditions. *Never before such Oil Control . . . Gas Mileage . . . Long Life!*



GREATER OIL DRAINAGE

The design of the "Equalizer" and the Formflex spacer provides more than 2 to 3 times greater area than any other oil ring.

Pedrick FORMFLEX chrome rings outperform, outlast all other piston rings by wide margins



You're the "Ringmaster" when
you recommend and install
Pedrick Formflex
Chrome Sets!

NOW it's as simple as ABC
to get the right Engineered
Set for any job.

Get a Pedrick FORMFLEX Chrome Ring Set.
It is guaranteed to outperform and outlast any
other installation in *any* engine, whether new,
rebored, resleeved, slightly worn or badly worn.
It is the first really *universal* installation. Keep
your shop busy with high-profit, no come-back
business by using new, better, all-purpose Pedrick
FORMFLEX Chrome Ring Sets for every ring job!

WILKENING MANUFACTURING CO., PHILA. 42, PA.
In Canada: Wilkening Manufacturing Co. (Canada) Ltd., Toronto



There's a
"NEW ENGINE"
in every box!



Picture Has Changed . . Continued from Page 43

sity, and much of the competition from other retailers will be eliminated automatically. It is unnecessary to resort to "scare" advertising to attain this goal. Just plain factual ads, pointing out the advantages of proper seasonal service, are quite effective. If the advertising is regular, is consistent, it will pay off. Make it clear *why*

the customer should bring the car in for service and *why* it is necessary to pay the price for good service.

The list on page 43 covers the winter services which should be advertised and sold in late Fall. These items can be used in groups as ammunition for a series of several ads, or as a single ad to cover all

of the main winter services. Such a list can also be used as a wall poster in the shop or as a reminder list for service salesmen and mechanics.

However winter service is advertised and promoted, remember that your shop and service department is not just competing against the shops and dealers in the community, it's competing against all the retail sales and service business in the area.

The market is there—last winter there was over 272 million dollars worth of anti-freeze sold in this country, and that's just one part of a tremendous market which opens each Fall. Fan belts, hoses, hose clamps, heaters, snow tires, chains, gas line anti-freeze, road sanders and more more products should be sold in the coming few months. "Open season" starts now!

This year, when a customer comes in as a result of a shop's advertising campaign, show him what he needs, and why he needs it. Sell him what he needs and make him want to come back again. A satisfied customer is the best ad you can have and it's the least expensive by far.

Never take even the most loyal customer for granted. Keep reminding him to come back, because he will hear the drums beating from many another retailer, both automotive and otherwise.

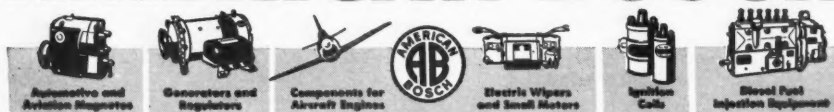


COVERS THE BIG REGULATOR REPLACEMENT MARKET

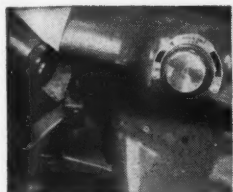
Here's a small sized package that holds big profits for you—the American Bosch "3 for ALL" Generator Regulator Kit! You can service nearly every popular car with one of these 3 American Bosch Regulators. They're packed complete with replacement data and installation instructions in an attractive display carton... a sales-active stock that requires only a few inches of shelf space to make a lot of service sales and money for you!

American Bosch Generator Regulators are a natural in the big, Regulator replacement market... millions of original equipment installations have proved their trouble free, long run performance. Exclusive, American Bosch features assure greater stability, guard against runaway voltage, protect both generator and battery. And sales-active American Bosch prices are *right* for replacement volume. Get set for sales NOW with this profit-making "3 for ALL" Kit. Ask your Jobber for details. American Bosch Corporation, Springfield 7, Mass.

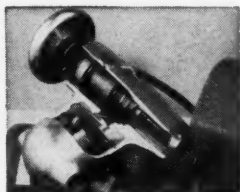
AMERICAN BOSCH



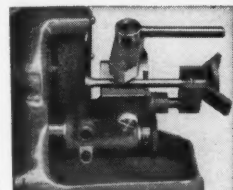
New B&D Valve Refacer Obsoletes all Others for SPEED, ACCURACY, PROFITS!



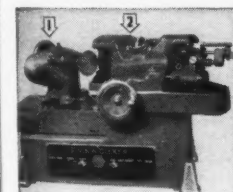
More Flexible Capacity built for years ahead! Takes up to 4" valve head, 9/32" to 11/16" valve stems, 0° to 90° valve angles; *traverse grinds at any angle!*



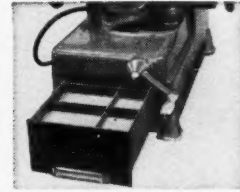
Finest Hypoid Gearing drives workhead spindle giving smoothest grinding finish.



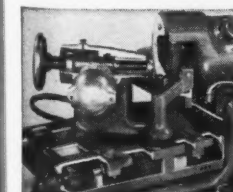
New End Grinding Attachment is extremely quick-accurate and efficient; gives you *everything* you need in one complete package!



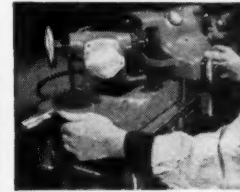
Smooth, Abundant Power developed by two B&D universal motors, independently driving collet and wheel spindles.



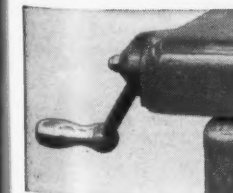
New Coolant System features wet grinding at both valve and attachment wheels, simplified one-valve control, improved coolant reservoir.



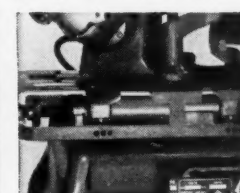
Quick-Acting Collet Clamp holds valve perfectly in line for factory-accurate grinding.



Simplified Controls improve skill of operator; free from complicated adjustments and "gadgets," tubes or wires.



Super-Speed Feed Screws for fast, accurate work; automatic end play take-up for finer finish.



4-Point Bearing Suspension for smooth, easy work table travel, greater accuracy.



**NEW Black & Decker
Deluxe Super-Service Valve Refacer**
(Cat. No. 550) **\$385.⁰⁰ Complete**

THIS new Black & Decker Valve Refacer is built for the years ahead, whatever the changes in valve design! It obsoletes *all* existing equipment. It helps you turn out valve jobs faster, gets them right the first time. There are no extras to buy . . . you get everything you need in *one complete package*. And it's loaded with such advanced features as the New End Grinding Attachment, unmatched for: (1) grinding valve stems to obtain exact tappet clearance on Ford type valves; (2) squaring all other valve stems; (3) grinding and truing tappets; (4) grinding and restoring the correct radius to all automotive rocker arms!

See your nearby Black & Decker Distributor for a demonstration. Write for detailed information to: THE BLACK & DECKER MFG. Co., 620 Pennsylvania Ave., Towson 4, Md.



LEADING DISTRIBUTORS EVERYWHERE SELL



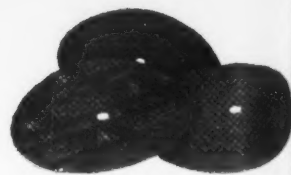
Black & Decker

PORTABLE ELECTRIC TOOLS

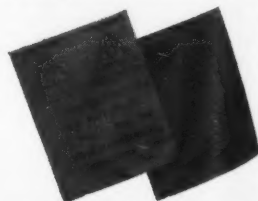
We found out what you



Profit with
all these
Behr-Manning®
products...



SPEED-WET® and METALITE®
Fibre Discs
For faster, more profitable sanding
OPENKOTE® or **CLOSEKOTE®** grills



TUFBAK* SPEED-WET® Paper
Revolutionary new wet-sanding paper
primers and undercoats.

® * Trade-marks

wanted in a masking tape

...THEN WE BUILT THOSE FEATURES IN BEHR-CAT

- 1 **UNROLLS EASILY** — masking can only be done as fast as tape comes off the roll — BEHR-CAT is fast.
- 2 **STICKS TIGHT** — masking tape is worthless if it doesn't hold properly — BEHR-CAT sticks tight.
- 3 **TAPE MUST BE THIN** — paint builds up on thick masking tapes and leaves a rough edge or tears off with the tape — BEHR-CAT is thin.
- 4 **STAYS ON THE CURVES** — tape must be flexible and strong to stay on the complex curves of an automobile — BEHR-CAT is made from the finest crepe for flexibility.
- 5 **TEARS EASILY** — although tape must be strong lengthwise, it must tear crosswise easily — BEHR-CAT has actually been engineered to tear across, but offers considerable resistance to lengthwise tearing — try it.
- 6 **COMES OFF CLEANLY** — a tape that doesn't "come-clean" can ruin an otherwise perfect job — strip BEHR-CAT yourself from an surface — not a speck of residue.
- 7 **TAPE WON'T DRY UP** — a good size body shop must keep big supplies of tape. They can't afford to have it dry up — if you have a supply of BEHR-CAT look at any roll — it's just as fresh and tacky as when you bought it.

We can tell you the virtues of BEHR-CAT Masking Tape. We're proud of it. It represents many years of research. But, naturally, you want to be shown. And we want to show you. Give your jobber a ring and let him demonstrate BEHR-CAT, or write us for a sample roll. It was designed for you. Address Behr-Manning Corp., Troy, N. Y. Dept. MA-10.

In Canada: Behr-Manning (Canada) Ltd., Brantford.

For Export: Norton Behr-Manning Overseas Inc., New Rochelle, N. Y., U. S. A.



▲ COATED ABRASIVES ▲ SHARPENING STONES ▲ PRESSURE-SENSITIVE TAPES



BEHR-DISKER* Sanding Pad Assembly
For superior feather-edging. Special slip-nut prevents disc tearing.



BEHR-CAT Adhesives and Sealers
Meet all shop needs for adhesives, fillers, caulking. Complete line.

Bookkeeping Continued from Page 61

Through the manipulation of the part's card and account card, the paper work and labor involved in locating and pricing the part, billing the customer and sending out statements is amazingly reduced. For instance, before the installation of the IBM system, it took one girl all month to post and prepare the monthly statements. Then

there was always the chance for human error and the subsequent complications of adjustment. Now the billing is done by one person in five hours, and, Olesen reports, there have been few complaints of errors.

One machine provides a complete daily report on the business transacted by each of the seven branch

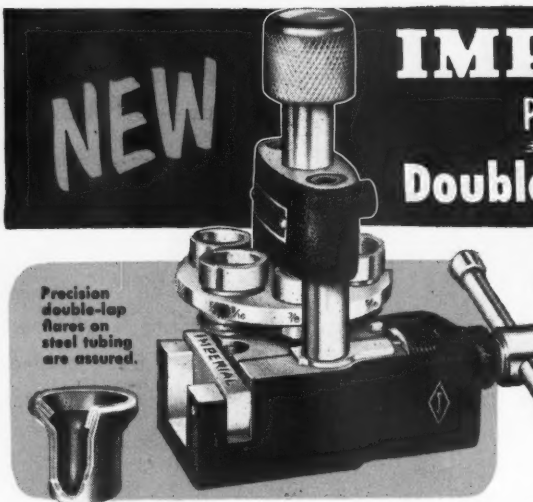
stores. Salesmen can receive complete information on transactions for a given period. The machine re-orders parts when necessary.

It's interesting to see these machines in action. One of them will take a stack of jumbled cards and put them in alphabetical order at the rate of one a second. Another will collate in a number of different ways. Another will take a stack of cards, run them through, come up with a statement of accounts receivable, accounts payable, or a complete statement.

On the latter machine, as the cards run through, the figures and information are automatically imprinted on the bills. Each card has certain holes punched through it which permit electrical contacts within the machine. As an account's card passes through, the machine imprints on the statement sheet the name and number of the account, a list of the part names and numbers for which the customer is being billed, the prices of the items, the total amount due and balance brought forward.

Olesen feels that it would be impossible to estimate in dollars and cents the advantages of this new system. Not only does it effect great savings in time and labor, but it also permits certain bookkeeping operations which previously would have been virtually impossible.

Spectacular Advance in Double Flaring



NEW

**IMPERIAL
PRECISION
Double Flaring Tool**

Precision double-lap flares on steel tubing are assured.

- Prevents Cracking or Splitting of Brazed Steel Tubing
- Provides Positive Control of Flare Size

Solves important brake, oil and gas line service problem

Makes precision double-lap flares on 5 sizes of soft steel tubing (such as Bundy or GM). Also makes single or double flares on copper and aluminum tubing.

Accuracy is controlled. Positive gauge provided to assure correct size of flare every time. Flare is always

true with axis of tubing, splitting of tubing is prevented.

Tool is completely integrated and has no extra parts to be lost.

No. 250-F IMPERIAL DOUBLE-FLARING TOOL for 3/16", 1/4", 5/16", 3/8" and 1/2" O.D. tubing. Dealer's cost...\$15.95

Other Imperial Tools to Speed Your Tubing Work



No. 93-FB Yoke type double flaring tool for 3/16", 1/4", 5/16", 3/8", 1/2" O.D. tubing. In metal kit.....\$8.95



No. 193-F Flaring Tool has quick slip-on yoke. Flares 3/16", 1/4", 5/16", 3/8", 7/16", 1/2" O.D. tubing \$4.35



No. 274-F Tube Cutter features free-wheeling ball bearing action. For 1/8" to 1" O.D. tubing.....\$3.85

Ask for Bulletin No. 3020

THE IMPERIAL BRASS MFG. CO., 1217 W. HARRISON ST., CHICAGO 7, ILLINOIS
In Canada: 334 Lauder Ave., Toronto, Ontario

IMPERIAL

Brass Fittings • Flexible Lines
Shut-Off Valves • Service Aids
Tubing Tools • Drum Faucets

See Your Jobber



A radio controlled electronic jeep that will back up, turn, blow its horn, or fire a gun won an Outstanding Achievement Award in Ford Motor Company's 1953 Industrial Arts Awards competitions. Donald Trumbull, 15, of Milford, Connecticut, explains the intricate electronic mechanism of his prize-winning entry to E. S. MacPherson, vice president, Engineering, Ford Motor Company.

Where Engineering makes the Difference ...FOX IS WORTH THE DIFFERENCE!

6-12

Engineering does make the difference when it comes to 6-12 Battery Testers. Fox-engineered Cell Comparator Testers eliminate all guesswork and calculation because with Fox testers you need no longer know, or adjust for, temperature or state of charge. Only Comparator testers show battery condition instantly and directly regardless of ampere, hour capacity, percent of discharge or hot or cold batteries. ONE reading tells the story at a glance! Engineering makes a big difference—and only Fox-engineered Comparators give you ALL of these advantages:

- Tests batteries by electrical comparison of battery cell voltage.
- Special Meter reads cell differences directly. No need for mental comparison.
- High Sensitivity indicates bad cells in any 6 or 12 volt battery, and warns of impending failure of doubtful cell.
- Prod can be connected across each cell without regard to polarity.
- Tests any battery, any time, regardless of size, capacity, temperature, condition or state of charge.

Portable Fox Model TC 612 is newest simplified 6-12 Cell Comparator.

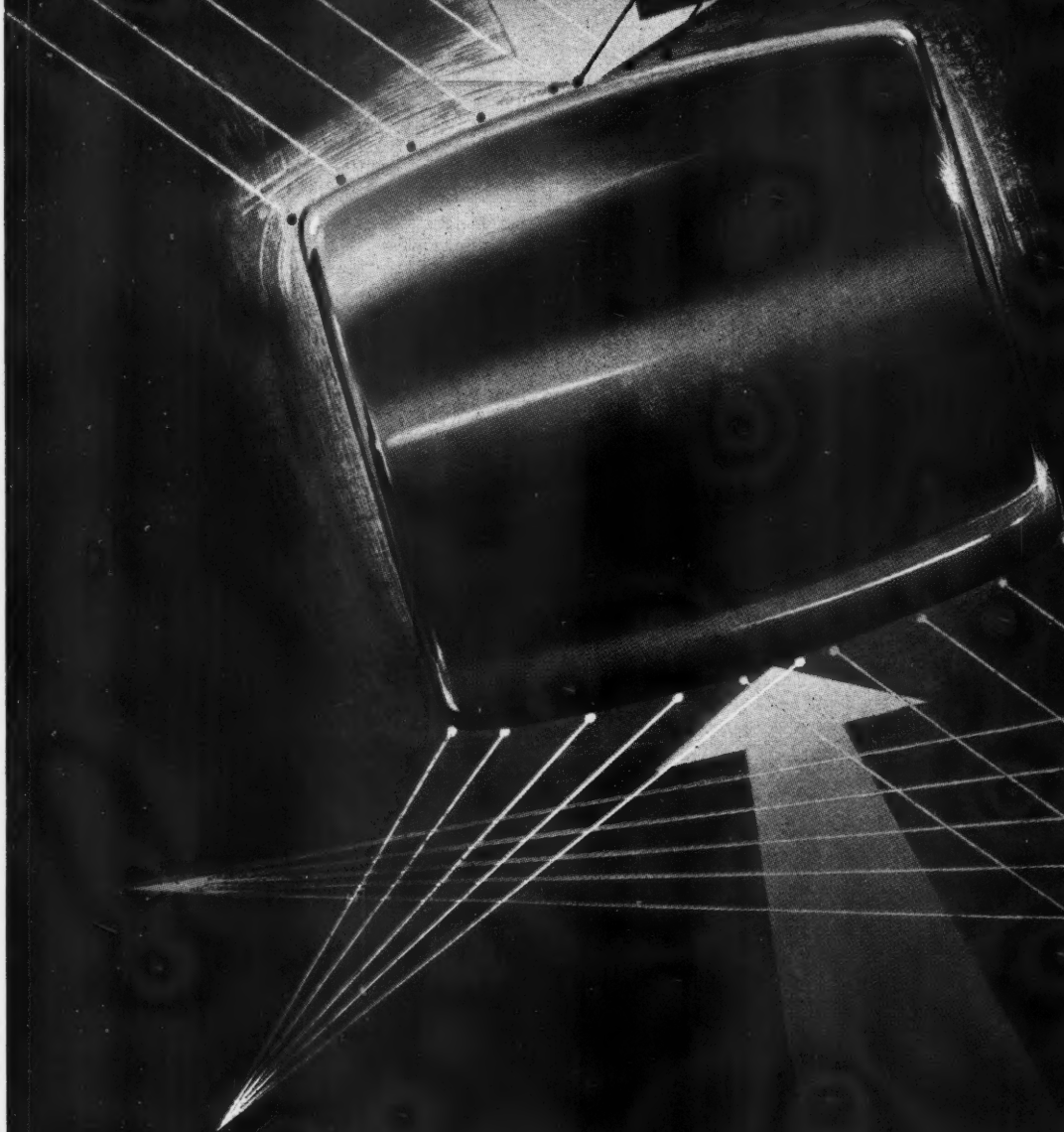
New LW-612 Charger-Tester combines Cell Comparator and charger in one unit.



FOX PRODUCTS COMPANY

4720 NO. 18TH ST., PHILA. 41, PA.

The barrel that's rolling for industry... **NEW**



HYATT BEARINGS DIVISION, GENERAL MOTORS CORPORATION

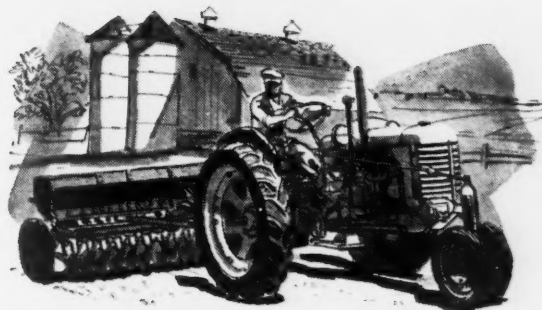
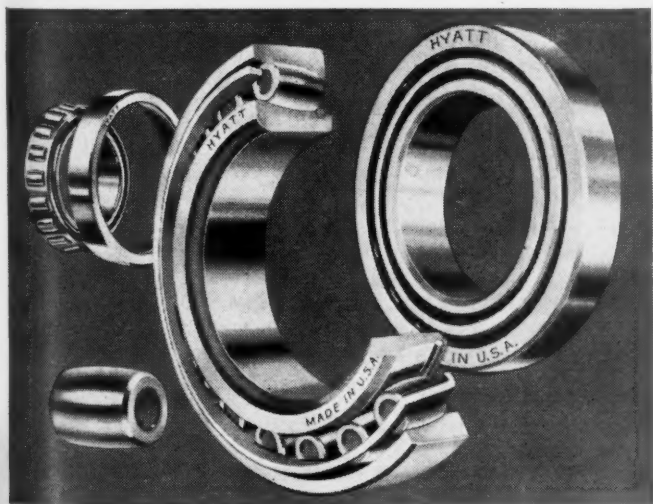
HYATT BARREL BEARING

**now available
in volume!**

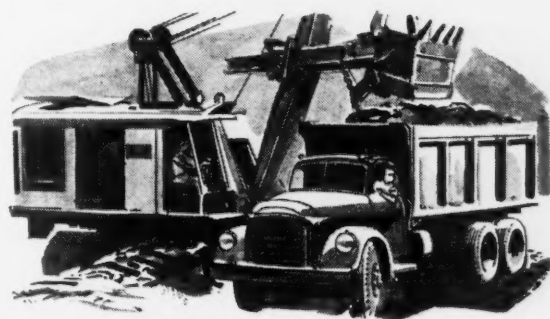
Hyatt is rolling out the barrels! . . . and a familiar shape is giving a big lift to modern industry! A new Barrel Bearing—pioneered and perfected by Hyatt—is available in volume for the first time! There's no other bearing quite like it—and it's ready for a starring role in industrial production!

The Barrel name comes from the barrel shape of the rollers . . . but its superiority in bearing applications comes from *dual-purpose design* and *self-aligning ability*! This unique bearing takes load from any direction . . . and operates at full load-carrying capacity under conditions of misalignment! And in addition, the barrel shape of the rollers combines the low rolling friction of a ball with the high load capacity of a cylindrical roller—so that the Barrel Bearing is ideal for a wide range of applications.

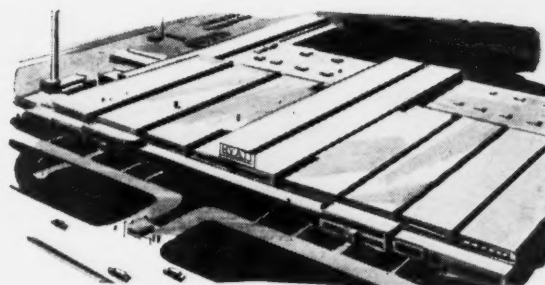
Expensive? *Not at all!* Advanced manufacturing processes—plus the facilities of one of the newest and finest bearing plants in the world—make the initial cost far lower than you would expect! . . . For full information on this newest solution to the friction problem, write to the address below.



Self-aligning action makes the Barrel Bearing ideal for tractors and farm implements. Over many years, its durable, dependable performance has been established in a wide range of these applications.



In trucks and construction equipment, too, Hyatt's Barrel Bearing operates with full efficiency under conditions of heavy, multiple-direction loading. Unique roller and race design distributes the load over large areas of contact.



Hyatt's new plant, in Clark Township, N. J., is among the most modern in the world. New equipment makes possible advanced manufacturing processes, and research facilities are the finest in the bearing industry.

HYATT

ROLLER BEARINGS

HARRISON, NEW JERSEY



A Quick-Detachable Connection that isn't a bottleneck!

Binks new Q-D Connection slashes pressure drop to only 5%!

Until now, you may have resisted buying quick-detachable connections for air hoses because of the "bottle-neck" they formed. Their advantages didn't offset the pressure drop such connections caused by restricting free air flow.

But now, after months of testing,

Binks offers you a Quick-Detachable Connection with a pressure drop of only 5%!

The improvement can be quickly seen when you realize that laboratory tests on other standard quick-detachable connections show pressure drops ranging from 21 1/3 to 57 1/3 %!

Beside much lower pressure drop, Binks new Q-D Connection offers four other major improvements for spray finishing guns and other air-operated equipment. Send coupon for details.



SEND for Bulletin Q-D. Tells how Binks new Q-D Connection speeds work, cuts fatigue, ends danger of damaging threads on expensive equipment. Includes prices for each of 9 different Q-D assemblies. No obligation. Send coupon or write: Binks Manufacturing Co., 3124-34 West Carroll, Chicago 12, Illinois.

For Bulletin Q-D, MAIL COUPON TODAY

Ask about our school
Provides training in best finishing methods. No tuition. Write Binks for class dates.

Binks
EVERYTHING FOR
SPRAY PAINTING

BINKS MANUFACTURING COMPANY
3124-34 West Carroll, Chicago 12, Ill.

☐ Please rush my FREE copy of Bulletin Q-D describing your new Quick-Detachable Connection.

NAME _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

☐ Send me class dates and other information about your school.

REPRESENTATIVES IN PRINCIPAL U.S. & CANADIAN CITIES • SEE YOUR CLASSIFIED PHONE DIRECTORY

Body Shop . . .

Continued from Page 56

Frank Hickam makes 10-15 calls a day on dealers and independent garages promoting the kind of frame straightening job turned out by his shop. He tells metal shop foremen that after a job is done, they will have no difficulty putting back the hood, fenders, cross supports and bumpers. He points out that when the Rosslyn Auto Body Shop does a frame straightening job, the dealer or independent shop will not have to remove engine, suspension or body.

With approximately 65 per cent of collisions frontend, a sizeable volume exists for the shop that can do a good dependable frame straightening job. Rosslyn's job, he points out, will present no realignment difficulty.

Hickam reviews in his calls on metal shop foremen the kind of symptoms a car presents when it needs a frame straightening and frontend job. Cars that pull to one side, that need to have their steering corrected, that shimmy at high speed are among those that should be sent to Rosslyn.

About 75 calls a week are made by Hickam, and some 85 per cent of their customers respond affirmatively, after he estimates a job in dollars and cents, and time required. He also gives references of other metal shop foremen for whom Rosslyn Auto Body Shop has worked satisfactorily.

Today Rosslyn Auto Body handles in its frame straightening shop about 12 jobs a day—a volume that only two years ago they

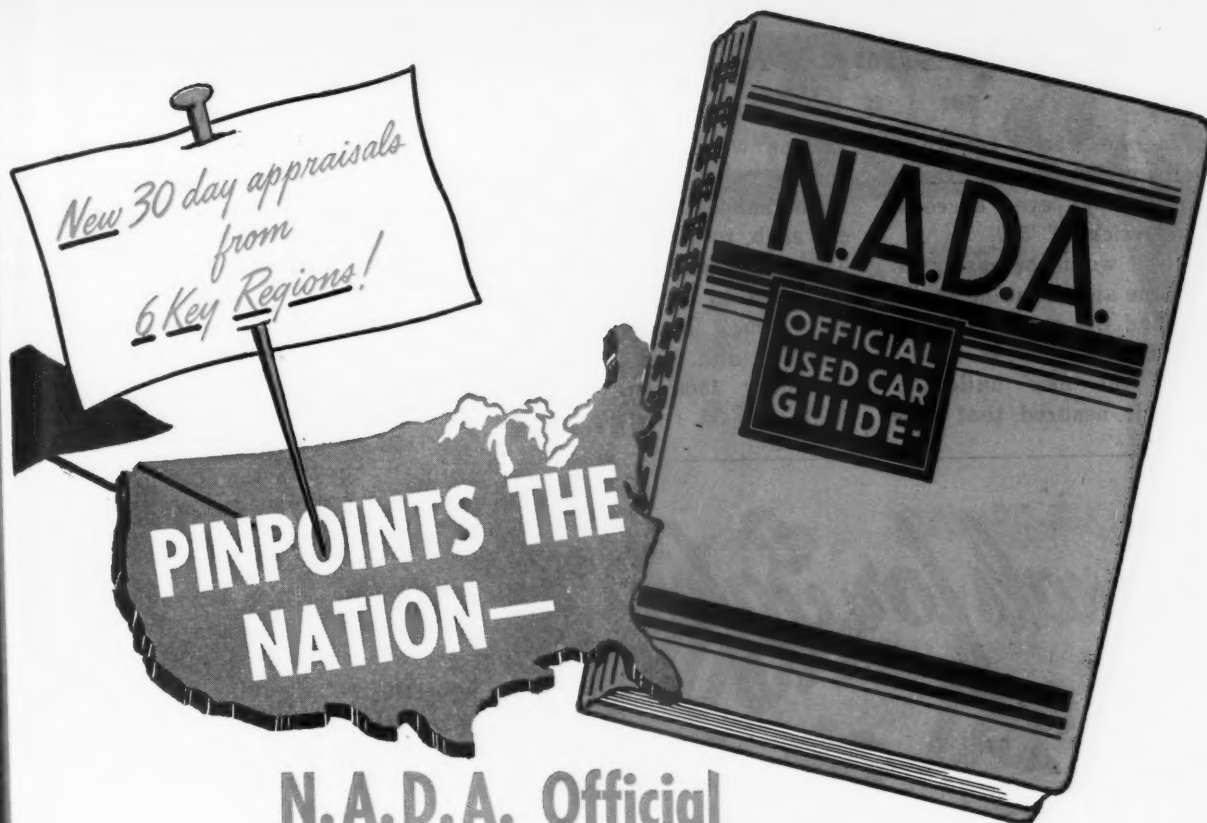
(Continued on page 96)



Jack Scanlon
Cleveland, Ohio
says . . .

IT'S YOUR BUSINESS
. . . or is it?

SEE PAGES 104-105



N.A.D.A. Official Used Car Guide gives you—

- Latest average retail, loan and "as is" values.
- Factory delivered prices.
- On trucks . . . the average retail, loan and "as is" values on most makes up to 16,000 #G.V.W.
- Insurance symbols, motor and serial numbers with locations illustrated, model identification, mechanical specifications and standard factory equipment.

Both the large quarterly issues and issues for the months in-between provide you with authentic, current values and data. All this easy-to-find information priced at only \$7 per year (Quantity prices upon request)

Here's the most dependable reference manual of its kind published anywhere—



N.A.D.A. Official Used Car Guide 1953 TRUCK REFERENCE BOOK lists—

YEAR MODELS — Latest specifications on all trucks since 1946, Factory List or Advertised Delivered Price of vehicle with standard equipment . . . and price information for year truck produced. **IDENTIFICATION** — Serial numbers for each year . . . and locations of motor and serial numbers for each make. **TONNAGE RATING** — Nominal rating . . . frequently required for registration and insur-

ance. **WEIGHT** — Recommended maximum weight when fully equipped and shipping weight with standard equipment . . . often needed for registration. **TIRE SIZE** — Specified in standard equipment and included in the price and weight. **WHEEL BASE** — The standard for each model or series. All Wheel Bases listed for light-duty trucks.

LIMITED EDITION — Order Today! **\$2.50** a copy (\$2 each in lots of 10 or more)

Published by

NATIONAL AUTOMOBILE DEALERS USED CAR GUIDE CO.

1026 17th STREET, N. W. • WASHINGTON 6, D. C.

managed in one week. In other words, daily production in frame straightening today even exceeds weekly production of '51.

"We knew it would be easier to build up frame and frontend work if we only had the space and facilities," said Manager G. W. Keys, speaking of the new building. "Once we felt assured that the

volume would come in, we proceeded to expand from the two frame shops we had, handling one car each, to a nine-stall structure where six stalls would be fully equipped to take care of heavy-duty truck and passenger car frontend and frame work."

Adding 4500 sq. ft., the new stalls are 35 ft. deep and 13 ft.

wide. Four frame racks, four frontend racks, two additional wheel balancers, an arc welder and another crane were purchased to meet increased volume. Two stalls in which heavy duty trucks are taken care of have doorways 2 ft. higher than in passenger car stalls. Three open stalls furnish space for assembly and assorted work, other than frame.

A door was built to permit passage between the main shop and the new frame shop. A 15 ft. x 18 ft. office in the corner of the new building now separates the book-keeping department from the main office.

The old 30 ft. x 15 ft. frame shop in the main shop has been converted to a car washing and simonizing stall. Half of the other old frame shop across the street has been turned over to upholstery work, the other half has been leased out.

The new building has six skylights and each stall has two overhead lights. Each of the six equipped stalls has a pit over which a car may be driven. There is an overhead door on each of the stalls.

A lot 70 ft. wide and 135 ft. deep provides accessibility to the stalls of the new building. Parking and storage space are also furnished by the lot.

Rosslyn Auto Body Shop sent out about 1000 postcards picturing and announcing the new facilities.

"We have more equipment and more modern equipment than our competitors, and with our six skilled mechanics who have been trained in our own shop, we believe our good reputation has come to us deservedly—and so has our success," said Hickam.

One of the largest body shops on the east coast, Rosslyn Auto Body Shop is now a \$30,000 a month operation employing 38 mechanics.

Signals for Safety—

CLASS "A" DIRECTIONAL SIGNAL LAMPS HEAVY DUTY

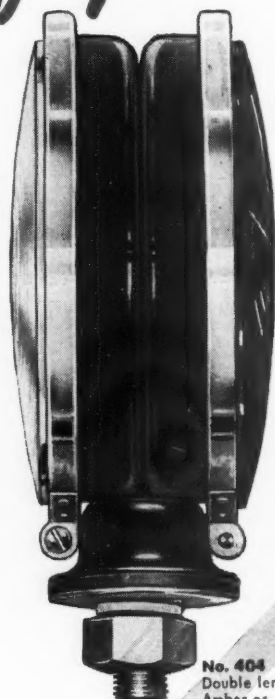
TRUCK LINE FOR ECONOMY

These heavy duty directional signal lamps are designed for safety and greatest economy of operation on commercial vehicles. Grote 400 Series lamps are newer — brighter — stronger — built to meet your needs as a truck operator. Heavy gauge rust-proofed steel body — stainless steel door — Plexiglass lenses: these are features that make the Grote 400 Series Class "A" Directional Signal Lamps your best buy for safety and economy.

Available in 18 set combinations with manual or self-cancelling switches.

Ask for Grote Lamps
at your jobbers.
Write for catalog.

THE **Grote** MFG. CO., INC.



No. 404
Double lens.
Amber or
red. Single
bulb.



No. 401 Single
lens. Pedestal
mount.



No. 402 Semi-flush.
Stud mount.



No. 403 Flush
mounting.

Grote Square, Bellevue, Ky.
Opposite Cincinnati

Bureaucrat: "If we aren't able to figure out a way to spend that two hundred and twenty million dollars, we'll lose our job."

Secretary: "How about a bridge over the Mississippi . . . length-wise?"

LOOK AT THE RECORD!

*Introduced by AC
in 1927*

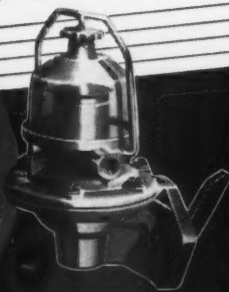
*115 Million
Built to Date*

*40 Million
in Daily Use*

*Serving 9 out of 10
cars on the Road*

AC

**FUEL
PUMPS**



**America's First
and Finest!**

Where Else, but Here . Continued from Page 82

building problem. (This was the second time that he had to ask for a 24-hour "last chance," as progress had bogged down during the time that he had tried to buy the lot.) In Aberdeen, a local builder was found who agreed to put up his building on D'Andrea's terms, and in 24 hours the necessary papers had been signed.

This was the last of the main hurdles, and the rest was comparatively easy. The building had to be constructed on a limited budget, and Bob worked many nights, doing much of the work with his own bare hands. It is with great pride that he shows off his second floor bulk parts storage room, in which every shelf was

put up by D'Andrea himself. Also, many of the showroom finishing touches were his.

A major problem still lies in breaking the ice with the townspeople. Bob belongs to every organization in town and is working toward being a "pillar of the community," which he feels is a position that every car dealer should hold.

His shop has only the best equipment, although it has a long way to go toward being a completely equipped shop. It has been designed for expansion, and D'Andrea hopes in a few years to be able to add a large body shop onto the rear. New car sales are going fine, Bob says. The other dealer was selling eight cars a month. A fleet account, Peterson, Howell and Heather, to which Bob has been selling since 1947, has been a big factor in raising the new car quota to 50 per month. This was an important factor in D'Andrea's being able to start off with a "bang."

Many a night Bob hops in his car and drives over to look at his new building. "I still can't believe it's mine," he says, "and if there's another country in the world where a fellow can become a dealer for a top flight car manufacturer, armed with nothing more than 'the guts of a tiger and a bucket of water,' I don't know where it is. Some day I'll be sailing down the Chesapeake on my cruiser, and someone will say 'There goes D'Andrea, the car dealer. What a racket he's got!' I won't say a word—I'll keep right on sailing."

De Soto Plans to Surpass Record Goal Set in 1950

De Soto's 1953 production officially surpassed that of all of 1952 last month, it was announced by J. B. Wagstaff, De Soto vice-president in charge of sales.

Production of 1953 De Soto cars amounted to 97,941 units, while production for all of 1952 numbered 97,585 units. With several months of the year remaining, the company's sights are now set on its all-time high production total of 127,430 De Sotos built in 1950.

The Pioneer

GABRIEL
SHOCK
ABSORBERS



These really bring in the Fords

Independent Garage men who want a big share of Ford winterizing business stock these Genuine Ford Parts; here's why —

THIS time of year Ford owners all over the country are getting ready to have their Fords serviced for winter. A great deal of this business can be yours—*if you are ready to handle it* with a supply of Genuine Ford Batteries, Spark Plugs and Oil Filter Elements!

When Ford owners know that you're equipped for their special needs they'll head for your shop . . . and they'll be easier to sell on complete winterizing jobs.

And you're going to get lots of help. Full-page ads in national publications will be selling these popular products to Ford owners everywhere!



Ford batteries

are tested to start at 20 below. They're shake-tested, impact-tested; cycled from full charge to full discharge hundreds of times. Ford Batteries, like all Genuine Ford Parts, are tested by Ford engineers before approved for manufacture.



Ford oil filter cartridges

are Track Tested thousands of miles in Fords. Both the full-flow and by-pass filters are designed to remove dust, carbon particles, and other oil contaminants dependably from a Ford's oil *without* removing useful oil additives.

Ford spark plugs

are manufactured to exact Ford specifications. They're designed for Ford's ignition system to give smooth engine performance and high gasoline mileage. And like all Genuine Ford Parts, they're made right to fit right to last longer!



How to get this sign

This business-boosting sign costs you nothing. Just clip the coupon and mail it today. We'll let you know quickly how you can get it for your garage.

MAIL THIS COUPON NOW!

PARTS AND SERVICE SALES DEPARTMENT

Ford Division, Ford Motor Company, Box 658, Dearborn, Mich. Please send me complete information telling me how independent garages can get a Genuine Ford Parts sign. I'd like to cash in on this, too!

FIRM NAME _____

INDIVIDUAL'S NAME _____

ADDRESS _____

CITY _____ STATE _____



YOU JUST CAN'T DO BETTER...

This set will out perform any other piston ring set in the
"hard to hold" jobs regardless of kind, design or price

CHROME CONTROL LEAK-PROOF

REG. U. S. PAT. OFF.

PISTON RINGS



McQUAY-NORRIS MANUFACTURING CO., ST. LOUIS 10, MO

...NO, YOU JUST CAN'T DO BETTER!





**"the man at the bottom of the hill
is getting the tire chain business"**

Few motorists think about buying tire chains until slippery roads catch them unprepared. Then they buy at the handiest spot: "the bottom of the hill."

Sell your customers

CAMPBELL *Lug-Reinforced* CHAINS
before it snows!

Only Campbell provides patented Lug-Reinforced construction. Extra metal in the lugs means extra wear . . . greater traction. National Safety Council Tests show that reinforced tire chains increase stopping ability nearly 3 times, and starting and climbing traction 4 to 7 times.

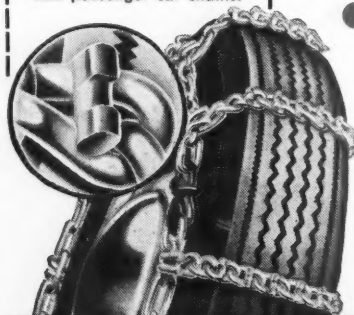
Campbell offers this sure-fire program to put you at the top of the sales heap:

- Modern, colorful package is easy to display, stores better, keeps chains neat in car trunks.
- Campbell gives you eye-catching banners, ad-mats, post cards and display suggestions.
- Campbell helps pre-sell your customers with regular advertisements in SATURDAY EVENING POST and COLLIER'S.

Call your jobber. Get complete details on the Campbell Merchandising Program.



Easy to use Chain Applier included at no extra cost with every box of Campbell passenger car chains.



CAMPBELL CHAIN Company

MAIN OFFICE: YORK, PA.

West Burlington, Iowa; Portland, Oregon; Sacramento, Calif.

Chain for every need...industrial...farm...marine...automotive



Plymouth . . .

Continued from Page 38

meet all driving requirements automatically. It enables the driver to turn the front wheels in parking on a dry pavement with only 6.7 pounds of effort.

To extend engine performance, Plymouth is using new silicon chromium alloy intake valves in 1954 models. Exhaust valve inserts have been retained. Other mechanical improvements include a higher capacity oil pump, new improved clutch, and improved electric windshield wipers.

Binks Accepting Students In Spray Painting School

Registrations are now being accepted for fall and winter courses in spray painting, conducted by the Binks Mfg. Co., Chicago. The week-long sessions are: September 14 through 18; October 5 through 9; November 2 through 6; and December 7 through 11.

The school is especially suitable for training officials, foremen, industrial distributors and jobbers' salesmen, paint salesmen, and those who service or use spray painting equipment.

Classes are limited to 40 students and each student is expected to pay his own transportation and expenses while in Chicago. All requests for enrollment should be sent to E. F. Watts, Binks Mfg. Co., 3114 Carroll Ave., Chicago, Ill.

One of life's little mysteries is why a girl will spend a lot of dough on a new slip and be annoyed if it shows.

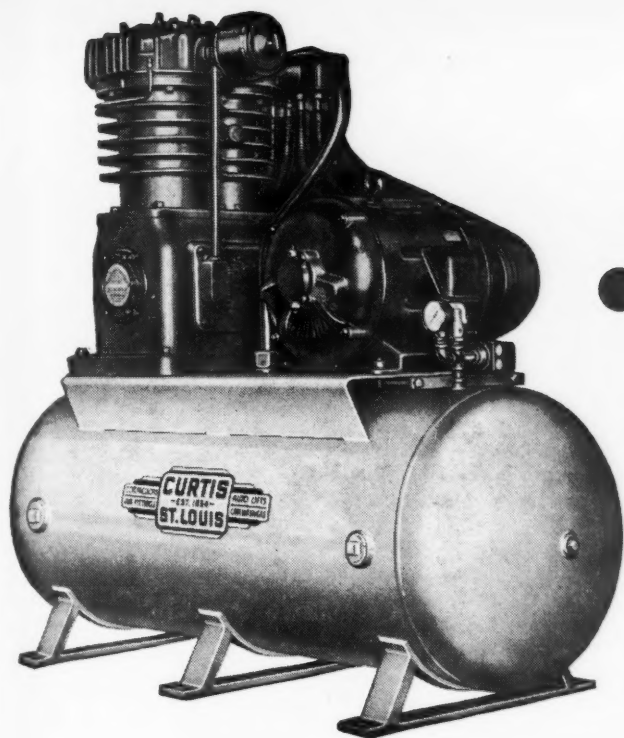


Robbie Robinson
Richmond, Va.
says . . .

IT'S YOUR BUSINESS

. . . or is it?

SEE PAGES 104-105



- PLENTY OF AIR
- LOTS OF PRESSURE
- AUTOMATIC!

**78 Cubic Feet Capacity
Delivered to You Ready to Run!**

- Just:*
- Oil motor bearing
 - Put oil in crank case
 - Connect to your current

Curtis 15 H.P. AIR COMPRESSOR

TWO-STAGE, AIR-COOLED

Delivers more air per horsepower, assuring saving in power bill.

INTERCOOLER

Four section, finned, providing unusually effective cooling between stages; located in cyclone of air from flywheel.

SELF-OILING

Simple, positive centro ring method; provides pressure lubrication of connecting rod and piston pin bearings.

TIMKEN MAIN BEARINGS

Tapered rollers; easy external adjustment without dismantling compressor.

VALVES

Readily removable as assembled units without removing cylinder head or breaking pipe connections or gasket joint.

AUTOMATIC START AND STOP CONTROL

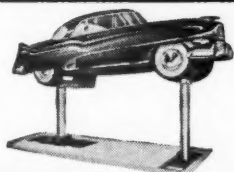
Motor protected by dependable vacuum type starting unloader.

AIR TANK

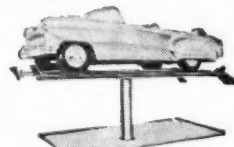
120-gallon, 200-pound pressure, built to ASME standards; automatic electric weld.

PRECISION WORKMANSHIP

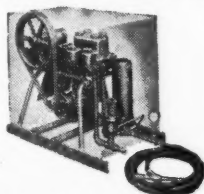
Backed by almost a century of manufacturing experience — to assure you dependable, trouble-free service.



**CURTIS FULL HYDRAULIC,
TWO-POST SHOP LIFT**
—for Passenger Cars and
Light Trucks



ALSO, Single post rotating lifts for
passenger cars and light trucks.



HYDRAULIC CAR WASHER
(300 Pounds Pressure)
—for better and faster car washing.
More cars washed each day
mean more profit for you.

CURTIS PNEUMATIC MACHINERY DIVISION

CM-727

of Curtis Manufacturing Company

1946 Kienlen Avenue, St. Louis 20, Missouri

I am interested in items checked:

- ☐ AIR COMPRESSORS ☐ AUTO LIFTS (Single Post) ☐ Two Post
☐ POWER CAR WASHERS

Name.....

Firm.....

Street.....

City..... Zone..... State.....

CURTIS PNEUMATIC MACHINERY DIVISION

of Curtis Manufacturing Company

1946 Kienlen Avenue • St. Louis 20, Mo.

IT'S YOUR BUSINESS

..... or is it?

Some years ago when we entered the automotive accessory field we had an idea that if the product was 'right' and car owners wanted it 'the world would beat a path to our door.'

Now, five years later, we've learned that we were both *right* and *wrong*!

. . . *right* because during this period we created a multi-million dollar industry for ourselves and others. *Right*, too, in that again this year KAR-RUG sales have increased . . . 45.8%

. . . *wrong* though, in believing that the world would 'beat a path to our door.'

The service station operators and car dealers who *have* stocked KAR-RUGS have sold them in increasing quantities . . . profiting from the steadily increasing demand by car owners. But many *others* have passed up the year 'round extra sales volume KAR-RUGS represent.

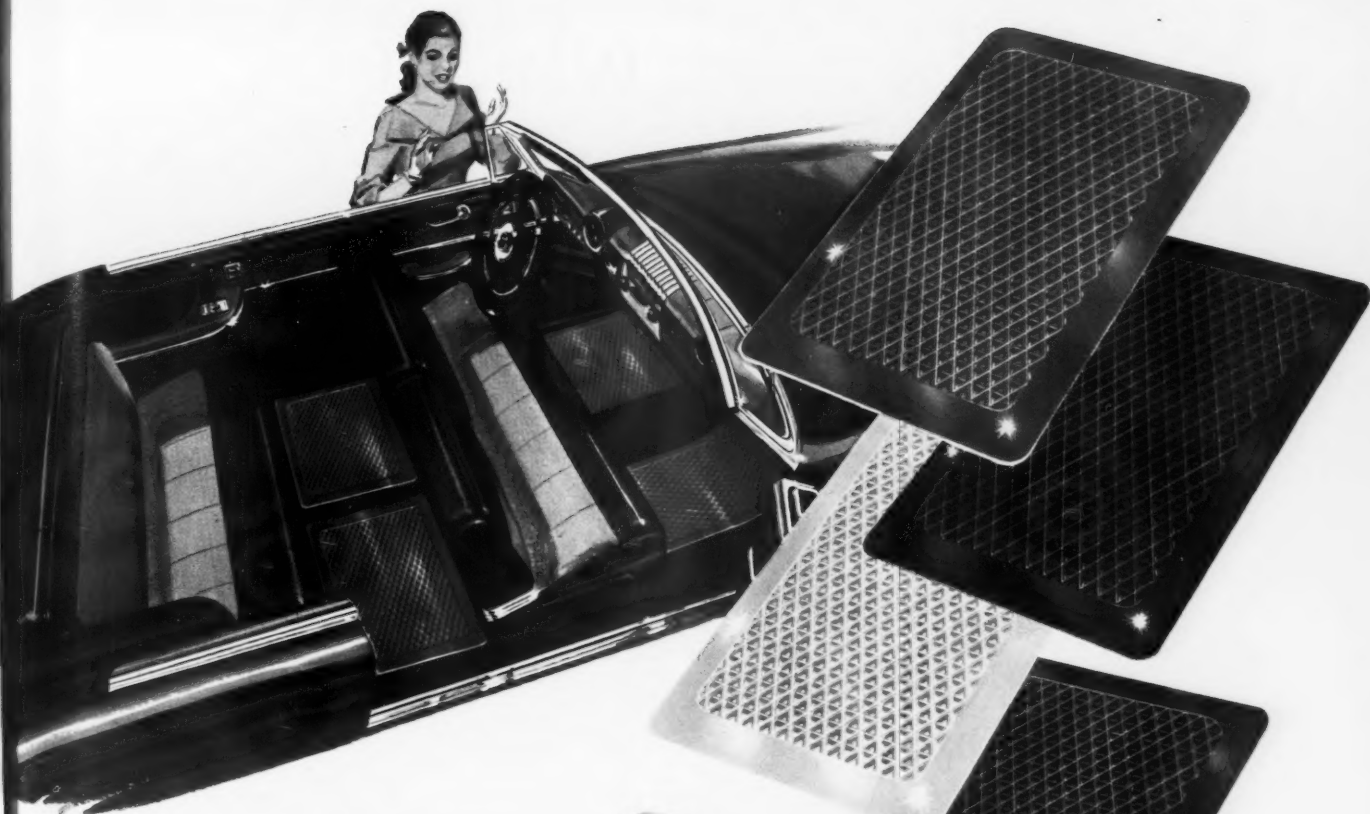
To those dealers who have not yet stocked KAR-RUGS, we'd like to say sincerely:

"If profit is your business —

IT'S YOUR BUSINESS to offer
your customers

RUBBERMAID KAR-RUGS!"

Rubbermaid®
KAR-RUGS



NEW COLORS

HOLIDAY HOLIDAY RED
COLORS HOLIDAY BLUE
 HOLIDAY YELLOW
 HOLIDAY GREEN

STANDARD COLORS

SILVER GREY FOREST GREEN
 BURGUNDY RED ROYAL BLUE
 DESERT TAN COCOA BROWN
 MIDNIGHT BLACK

NEW LOW PRICES

No. 1452	16"x18"	\$1.69	\$1.39
No. 1454	18"x21"	2.19	1.79
No. 1455	15"x25"	2.19	1.79
No. 1459	18"x26"	2.69	2.19

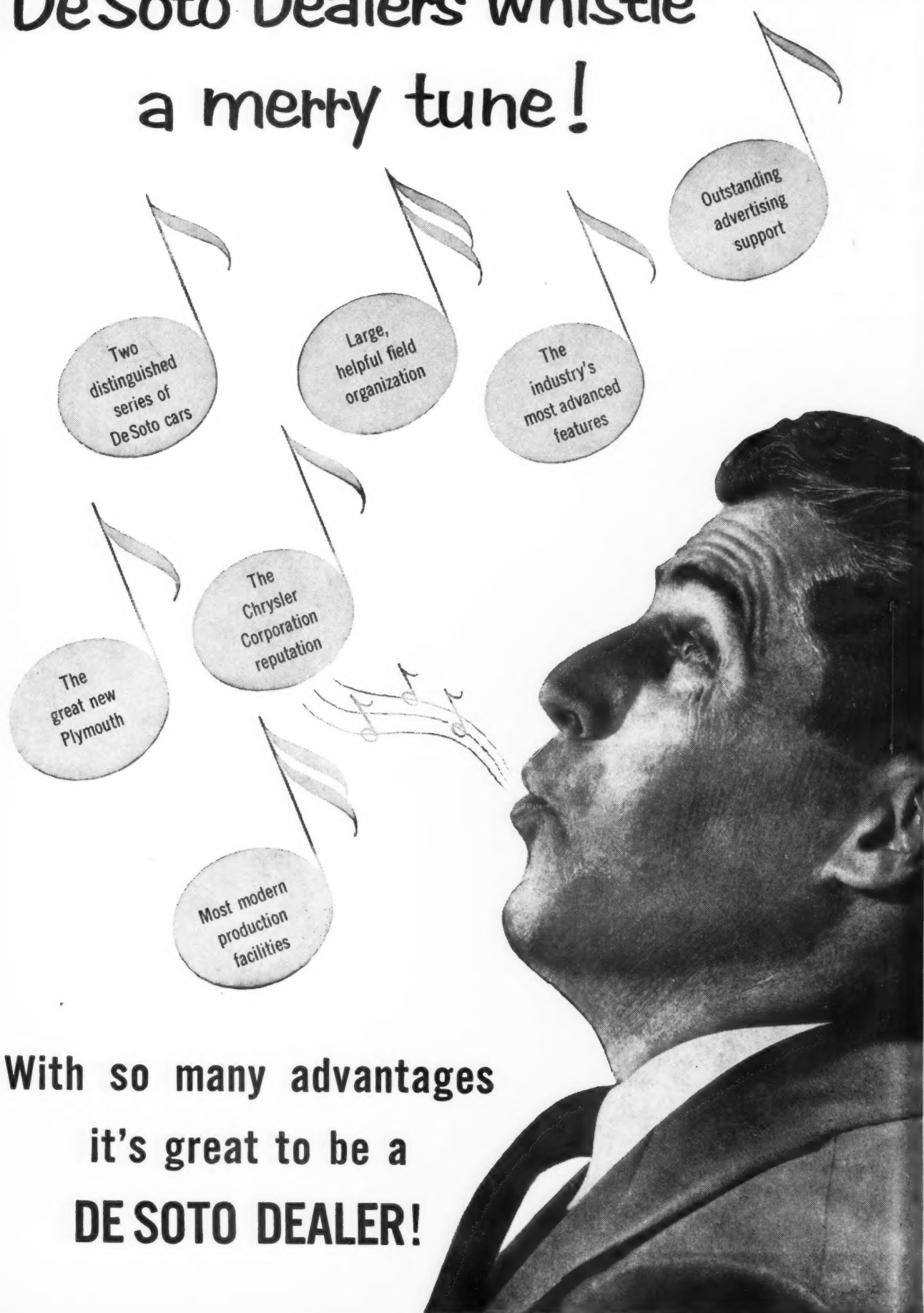
UNLIMITED MARKET

Tear out this page as a reminder to see your Jobber salesman.

Work out with him your Kar-Rug stock of sizes and colors to meet your customers' needs.

HERE'S WHY KAR-RUGS CONTINUE
 TO BE AMERICA'S FASTEST SELLING
 AUTO ACCESSORY

DeSoto Dealers whistle a merry tune!



With so many advantages
it's great to be a
DE SOTO DEALER!

Engineering Highlights • Cont'd from Page 63

Outline of Procedure for Operation H-M

1. Establishment of Hydramatic production on a comparable scale at Willow Run where the Corporation executed a lease with Kaiser for 1,500,000 sq ft. This project was tied in with immediate salvage and rebuilding of machine tools that survived the fire; acquisition of additional machine tools to replace those beyond repair; manufacture of jigs and fixtures destroyed by the fire; and replacement of the many items of gages and inspection equipment rendered useless.

2. Initiation of a sub-contracting program for producing H-M components by many outside manufacturers, including a number of GM Divisions. Parts thus produced are to flow to the Riopelle plant, the original home of H-M where assembly and testing will be reorganized.

3. Emergency plans, announced at the time, to establish some production of automatic drive cars by diverting Dynaflo transmissions to Cadillac and Oldsmobile; Powerglide drive to Pontiac.

4. Long range planning to rebuild Livonia.

Although the foregoing lists these moves in a given order, it will be appreciated that action is simultaneous on all facets of the emergency plan with all of the projects given immediate attention.

A major effort was made to have some flow of Dynaflo and Powerglide transmissions at the earliest moment so as to establish at least modest production of Cadillac, Olds, and Pontiac.

The sales problem is serious since Cadillac has employed automatic drive 100 per cent; Olds 98 per cent. And it is doubtful whether the buyers would accept anything but automatic drive in cars of this price class. At the best, however, Dynaflo and Powerglide can handle only a small percentage of requirements and even this entailed the impress-

ing of additional facilities and additional working hours with the penalty of overtime operations.

It is obvious too that more synchromesh transmissions will have to go into Buick Specials, Pontiacs, and Chevrolets while the emergency persists.

In any event this move is expected to be a temporary expe-

dient to initiate production of 1953 cars. The major help, necessarily, must come from the Riopelle assembly plant which will be fed from the sub-contracting pool. The original estimate—at least the goal—for this phase was some six to eight weeks from the date of the fire.

Backing these palliative measures is projected Willow Run production. The established goal was from 90 to 120 days from

(Continued on page 108)



I'M SHARP!
I HAVE A LONG LIFE CARBIDE CUTTER

I'M TOUGH!
I CUT MOST STEEL SLEEVES

I'M FAST!
I REMOVE CYLINDER RIDGE
WITH ONLY A FEW TURNS

I'M ACCURATE!
I HAVE SELF CENTERING JAWS

**AMMCO model 2100
RIDGE REAMER**

Range 2⁹/₁₆" to 5"

..... only \$965

AMMCO TOOLS, INC.

2102 COMMONWEALTH AVENUE, NORTH CHICAGO, ILLINOIS

Engineering Highlights • Cont'd from Page 107

the date of the fire. Given the breaks that are being created by enterprising action, this may provide production flow by December. In that event, it should be a certainty that 1954 models will offer H-M drive and will be prepared to meet the demand.

Livonia contained about 3318 machines. By August 24 the last

one had been removed from the wreckage. By that time 2712 machine tools had been salvaged and were enroute either to Willow Run or to a rebuilding source.

Salvage operations were handled on a precise military basis. We mentioned earlier that the Corporation borrowed a team of 188 specialists from various Divi-

sions. The master plan established 38 rehabilitation teams, representing the same number of departments at Livonia, each one headed by a captain, usually the foreman or in some cases a division superintendent.

Thirty-one GM master mechanics were at Livonia the day after the fire, together with some 29 plant engineers and maintenance experts. These men were assigned to the various teams as consultants. The teams were responsible for on-the-spot inspection of equipment as it was hauled out of the wreckage. Experts on machine tools decided the disposition of each item by quick inspection. And each machine then was tagged to indicate whether it was repairable, or junk.

**DO A BONDED
BRAKE RELINING
IN MINUTES!**



**NO SHOE EXCHANGE
NO COSTLY EQUIPMENT
NO LARGE INVENTORIES**

Revolutionary Lock-On metal-backed linings are quickly, easily installed with ordinary tools. Only 24 sets fit 90% of all light cars and trucks. Every set factory tested and guaranteed perfectly bonded.

BONDED TOGETHER FOR PROFITS AND SAFETY

Fused Fabric
Lock-on



THE RUSSELL MANUFACTURING COMPANY, MIDDLETOWN, CONN.



"Listen, Bud, are you trying to tell me that I don't know what a plug looks like?"

Whether or not the full story of the disaster will be known is a matter for conjecture. One official version given the writer is this: A welder employed by an outside contractor was cutting a return steam pipe located about 15 ft. above floor level. As is usual practice at GM several plant protection men were standing by with CO. extinguishers. However, the welder was on a ladder whereas the stand-by men were on the floor. Near the steam pipe was a monorail conveyor line, mounted from the ceiling, carrying stampings from a washer. Below the conveyor line was the usual drip pan

(Continued on page 110)

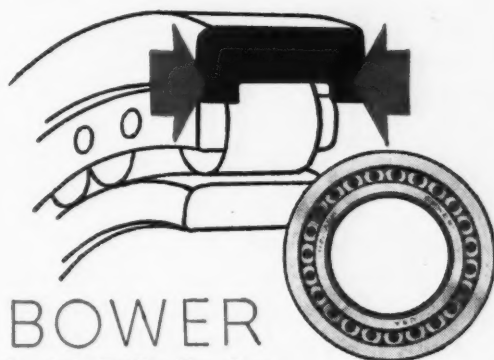
*Two Lips
make all
the difference*



**BOWER STRAIGHT ROLLER BEARINGS HAVE
DOUBLE-LIP CONSTRUCTION . . . FOR STRENGTH!**

Unless the flute-tootler keeps a stiff upper (and lower) lip, the cobra has lunch—on the swami!

Lips are important in bearings, too. The double-lip construction of Bower straight roller bearings provides superior strength and excellent alignment of rollers, with consequently increased bearing life. Close tolerances mean easy installation. Ask your Federal-Mogul jobber!



BOWER
Straight Roller Bearings



Federal-Mogul Service

(Division of Federal-Mogul Corporation)
DETROIT 13, MICHIGAN



For service applications: Bower double-lip straight roller bearings • Spher-O-Honed tapered roller bearings • Journal roller assemblies.

Engineering Highlights • Cont'd from Page 108

to catch the drip from the work. Some sparks from the cutting torch dropped onto the drip pan and started an oil fire. It was a difficult place to reach with fire extinguishers and the fire gained headway quickly. However, the conveyor had been stopped by this time. Within five minutes the fire had reached some power lines, put-

ting the electrical system out of order, stopping the ventilating system. In short order the entire area was filled with dense smoke from the oil and wiring insulation, making it necessary to evacuate everyone in the plant and making fire protection operations untenable.

Fire walls, where they were

practical, were instrumental in saving the main office building, the new office building then under construction, and the executive garage. The power house, located remotely from the plant, also escaped damage. These buildings, together with the several thousand footings supporting the structure, remain as the nucleus for later rebuilding.

While no official estimates have been available, reliable news sources have said that the damage is around \$70,000,000, about \$31,500,000 being covered by insurance.

Let us turn now to Willow Run. GM has leased 1,500,000 sq ft of floor space in the area earlier set aside by K-F for building cargo aircraft. This is about the same floor space as at Livonia and doubtless will be set up in about the same way with the same number of machines, tools and equipment.

Willow Run will set up for producing the same types of Hydramatics as were in production at Livonia and it is hoped that production volume will be sufficient to carry the 1954 model program. At some point Riopelle doubtless will be closed down and this would be most likely to occur after Willow Run is in full swing.

Willys Gains 54 Per Cent Over Same Period in '52

Registration of Willys passenger cars, including station wagons, showed a national gain of 54 per cent for the first six months of 1953, Roy Abernethy, general sales manager of the Kaiser-Willys Sales Division, announced.

Dealers registered 27,355 new cars in the period, he reported, compared with 17,724 in the comparable six months of 1952. (Willys captured .95 per cent of the 1953 market, or a gain of .12 per cent over the same period in 1952.)

Abernethy said that dealers had unfilled orders for 11,000 units on June 30, the result of a supplier's strike which halted Willys assembly lines in the last two weeks of May and throughout June.

NOW... greater SERVICE PROFITS.

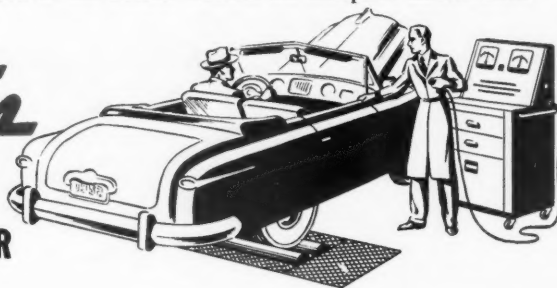
OPERATOR TRAINING DOES IT!



Your dynamometer operator can now become an expert... by attending the Clayton Dynamometer Operator Training School for one week. An intensive 5-day course covers every phase of dynamometer operation... trouble-shooting, tune-up, inspection and performance checking... guarantees profitable operation. A class starts the second Monday of each month at the Detroit school, located at 4620 Oakman Blvd., near Chicago Blvd. Another class starts the third Monday of each month at the Clayton factory in El Monte, Calif. Courses at both schools are identical... streamlined to teach proved dynamometer techniques selected from the best of hundreds of successful operations. Enroll your operator or service manager and insure greater service profits. Mail the coupon to the nearest address for complete information.

Clayton

CHASSIS DYNAMOMETER



CLAYTON MANUFACTURING CO. (USE NEAREST ADDRESS) MA-10
4620 Oakman Blvd., Detroit 4, Mich., or Box 550, El Monte, Calif.

Send complete information on Dynamometer Operator Course at school checked. Also send new book on dynamometer operation.

DETROIT SCHOOL () EL MONTE SCHOOL ()

NAME _____

FIRM _____

ADDRESS _____

CITY _____

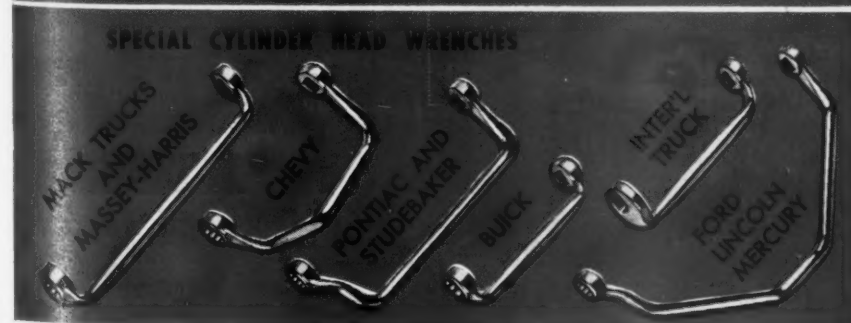
ZONE _____ STATE _____



Put a plus in your pay check...with built-for-the-job ***Snap-on** "SPECIALS"



PILOT BEARING PULLER



Amazing... the time (*and energy and temper*) you can save on tricky jobs with the right Snap-on Specials! Every one is a dependable short-cutter to a fast job and good work. Each reflects 33 years of Snap-on *know-how* in perfecting tools that help a man save time and make more money. Each is widely shop-tested and solidly O.K.'d before it gets a place in the Snap-on line. There are many Snap-on Specials—let your Snap-on Man help you choose the ones you need most. For the new 104-page catalog "U," write

SNAP-ON TOOLS CORPORATION

8036-J 28th Avenue, Kenosha, Wisconsin



*Snap-on is the Trademark of Snap-on Tools Corporation.



World-famous for fine performance
GENERAL MOTORS PARTS & ACCESSORIES



DELCO
BATTERIES

INLITE
BRAKE LININGS

DELCO
ELECTRONIC PARTS

HYATT
ROLLER BEARINGS

Delco-Remy
STARTING,
LIGHTING & IGNITION

HARRISON
THERMOSTATS

HARRISON
RADIATORS

DELCO
SHOCK ABSORBERS

MORaine
GASOLINE FILTERS

MORaine
ENGINE BEARINGS

Guide
LAMPS

ROCHESTER
CIGAR LIGHTERS

ROCHESTER
CARBURETORS

DELCO
BRAKE PARTS AND FLUID

Saginaw
JACKS

NEW DEPARTURE
BALL BEARINGS

KLAXON
HORNS

DELCO
AUTOMOTIVE MOTORS
AND CLOCKS

Packard
CABLE

AC
GAUGES—
SPEEDOMETERS

GATE 1





AUTO TRADE ENTHUSIASTIC ABOUT DELCO BRAKE FLUID DISPENSER



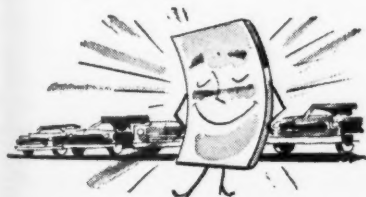
It's the new easy-to-use plastic brake fluid dispenser that keeps fluid clean and ready for use—and it's got the trade talking. In the last issue of "Timely Topics" we showed photographs of what happened to rubber parts when one drop of oil or gasoline entered the brake line—how foreign matter can swell and deteriorate these parts. Well, the response was instantaneous and overwhelming—it seems that everyone wanted this special brake fluid dispenser, exclusive with Delco. If you haven't yet secured your dispenser, you'll be smart to get in touch with your United Motors distributor immediately.

• • •

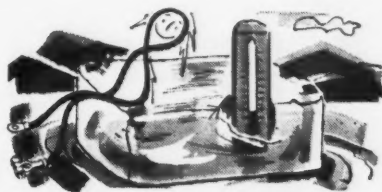
It's surprising how many people are misled by the term "fog lamp." Actually it should be called an "adverse weather" lamp, because it serves the same purpose in snow, rain or mist as it does in foggy weather.

• • •

BRING ON THE ENGINE PRESSURE! NOW BEARINGS CAN TAKE IT!



In pursuit of higher engine power, designers have plenty of methods at their command—higher compression, enlarged valve openings, changes of cam design, souped-up electrical systems, improved carburetion, just to name a few. One damper on power hypo has been the danger of overloading main and connecting rod bearings. The good news now is that engineering tests of the recently developed Moraine-400 aluminum bearing prove that the lid's off, so far as this particular limitation is concerned. The Moraine-400 shows remarkable resistance to loads and pressures, and the design men have a blank check.



ANOTHER PACKARD CABLE FIRST!

Shortly after announcing a new and more durable insulation ("249") for low tension cable, Packard follows up with a new and remarkable insulation ("809") for battery cables. While offering all the outstanding features of "249"—such as: greater dielectric strength and higher resistance to fire, oil, abrasion and chemicals—the new "809" battery cable insulation won't break or shatter at extremely low temperatures, making it ideal for use in all climates.

• • •

ANOTHER REMINDER that United Motors offers all the necessary equipment for efficient servicing of Delco 6- and 12-volt batteries. This includes the Electro-Check for fast and accurate checking of battery and regulator voltage, the Trikl-Charg unit for protection of all batteries, and the handy Delco Demineralizer that produces pure battery water from any tap water in a matter of seconds!

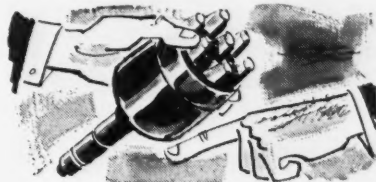
• • •

EXTREME APPLICATIONS ARE ROUTINE AT NEW DEPARTURE

In a specially conditioned room at New Departure, ball bearings are being produced to accommodate a shaft with a one-millimeter diameter, for use in precision instruments. While in another part of the plant, bearings are manufactured for shafts with a 7-inch diameter. These are but two of the many and varied applications that require New Departure bearings. As a pioneer in the bearing industry, these extremes are commonplace, for over 18,000 different types and sizes of bearings are produced by New Departure to meet the requirements of countless applications. As a matter of fact—there isn't a vehicle on the road that doesn't have at least one New Departure ball bearing in it!



IDENTIFICATION OF DISTRIBUTOR GEARS



During the past several years four different gears have been supplied for ignition distributors used on such applications as Chevrolet, G.M.C. Truck, and others. Since the gears look so much alike, identifying grooves have been machined into the hub of three of the gears. Even though they look very much alike, they should be used only on applications for which they are designed because of a difference in material and specifications used in making the gears. It all boils down to the fact that it pays to make a careful check to be sure you are using the correct gear.

DELCO FILM EXPLAINS THE 12-VOLT SYSTEM



It's not three dimensional, but it has everything else a good movie should have. The title of this exciting technicolor picture is "Power Insurance"—and believe us when we say, it has a message for all automotive men. And that message is a clear-cut explanation of the new 12-volt ignition system. The film illustrates in a simple but interesting manner all the electrical units concerned with the 12-volt system and how they work together to afford new power insurance. As the 12-volt system gains in popularity it becomes more important that we fully understand its function and operation. It's to your advantage to see this informative film, so check your Delco battery distributor for his date of showing.

• • •

ADAPTABLE SPARK PLUG PROTECTOR fits both angle and straight terminals. Packard Cable introduces this inexpensive accordion-pleated protector in packages of 6 or 8 to fit all popular sizes of spark plugs. Packard also offers an attractive counter merchandiser containing 24 protectors to fit 10MM and 14MM spark plugs. The stock number is 294.

**DELCO 5-MOTOR DISPLAY
SERVICES 90% OF APPLICATIONS**



United Motors announces the release of a Delco Appliance Motor display containing five 6-volt electric motors that will service 90% of the automotive applications. Of the five universal motors, three are reversible for clockwise or counterclockwise rotation. Four of the motors have reversible mounting studs. Shaft diameters are standard $\frac{1}{4}$ " and $\frac{5}{16}$ ". All motors are waterproofed and can be used in any type of installation regardless of exposure.

**INLITE BROADENS MATCHED SET
BRAKE LINING LINE**

By the addition of eleven passenger car sets of matched brake linings and thirty-eight truck sets, the Inlite matched set line now covers all popular cars and light trucks. The new Inlite catalog lists the line and the many applications they cover. Of course, the new linings, as is true of the rest of the line, are matched sets, engineered to give dependable, equalized brakes on all four wheels and to stop the car in a smooth, quiet way without dangerous wheel slide. This is fact—as all Inlite linings undergo rigorous tests in both hot and dry climates as well as cold, damp climates to assure maximum performance under all driving conditions.

**THE RIGHT CARBURETOR PART—
RIGHT WHEN YOU WANT IT**



Rochester's carburetor service parts assortment is the answer to the busy mechanic's prayer. It contains all the fast-moving parts needed to service General Motors cars and trucks using Rochester carburetors—including 1953 models. The parts are conveniently packed in a container that can be used on a counter or hung on the wall. All of the 17 parts are in every day demand and available for quick use. The stock number is 7000200.



**HARRISON THERMOSTAT DISPLAY
SPARKS SALES**

The theory that if you display them right, they'll sell themselves, is a proved fact in the case of Harrison thermostats. The display was designed to be attractive, functional and compact—the three "musts" of an ideal display. As an added measure this thermostat display was designed to be adaptable for either wall or counter use. It's a space-saving display because it holds 22 thermostats that cover 90% of all cars. There is a complete up-to-date application chart and catalog furnished with each display. All of these features add up to a noticeable increase in thermostat sales.

**IN 1925 LOVEJOY HATED BUMPS
—SO TODAY, WE ENJOY LOVEJOY**



Until 1925, your riding comfort in a motor vehicle depended largely on your ability to steer around the larger holes and bumps which were the distinguishing feature of most of our highways. This exercise, though unfailingly interesting and exciting, left much to be desired. It was automotive pioneer Ralph M. Lovejoy who got mad enough to do something about it. Having had quite enough of both spine-wrenching jolts and opportunities to demonstrate his reflex-reaction time, he buckled down to invent that ingenious device known as the hydraulic shock absorber. "Ingenious" is not too strong a word—so great was his cunning that his invention included a relief valve permitting adjustment of the degree of resistance, to allow for weight, spring tension, and other characteristics of the individual car. In the years since, Delco has made many improvements on the original Lovejoy valve, but it was Lovejoy's hate of discomfort that led to Delco's "engineered ride control" and the riding ease we enjoy today. • • •

DID YOU KNOW that due to the ease of use and durable construction, Saginaw ball bearing jacks are used for fence stretching and other uses besides changing flats?

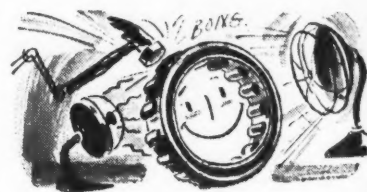
**MORE NEWS ABOUT
DIRECTION SIGNAL LEGISLATION**



So far this year thirteen additional states have passed legislation to the effect that all new motor vehicles must be equipped with turn signal devices. Up to this year Minnesota, New Hampshire, New York and North Dakota had such a requirement on the statute books. New laws, effective in 1953, have been enacted in Delaware and North Carolina. In Iowa, Nebraska, New Mexico, South Dakota, Washington, New Jersey, Ohio, and Illinois, the law becomes effective in 1954. In 1955 the law will be enforced in Idaho, Vermont, and Wisconsin. Proposals of a similar nature are now pending in Pennsylvania. In cooperation with state legislative bodies, Guide Lamp has designed turn indicators to comply with all existing laws and is in a position to extend quick and convenient service when the need arises.

**EXHAUSTIVE TESTS PROVE MERIT
OF HYATT SPHERANGULAR BEARING**

Continuous laboratory tests plus an accumulation of hundreds of thousands of miles in various applications have well proved the worth of Hyatt Spherangular Roller Bearings. Produced by special equipment and closely guarded specifications, this unique bearing was designed to fulfill the need for an angular contact type bearing of high capacity, which could sustain both radial and thrust loads, and would at all times be freely self-aligning. It sounds like a large order, but these Hyatt bearings more than fill the bill. The superiority of the bearing lies in the fact that as the load increases, additional surface of the cups, cones and rollers come in contact, automatically increasing the load capacity of the bearings.





Continuous Advertising

helps you sell more GENERAL MOTORS parts and accessories

DEALERS: When you feature the United Motors lines you automatically have the support of national advertising that is both hard-hitting and constant. You have the assurance of consumer acceptance, because all these General Motors parts and accessories have won wide acclaim for quality, dependability and performance. And you have the advantage of availability—for there's a United Motors distributor near you. Contact him today!



This 2-color ad will appear in **LIFE** **OCT. 5** **SAT. EVE. POST** **OCT. 31**



This 4-color ad will appear in **SAT. EVE. POST OCT. 3** **LIFE OCT. 26**

This 2-color ad will appear in **SAT. EVE. POST SEPT. 5** **COLLIER'S SEPT. 18**



This 4-color ad will appear in **COUNTRY GENTLEMAN** **SEPTEMBER**



Now that the key is turned "on," let's hit the starter button. As the engine begins to crank, the rotor and cam in the distributor are rotated, usually by worm gears in the camshaft, at one-half engine speed. The nearest lobe on the cam moves toward the fibre rubbing block on the movable breaker point, until it breaks the contact. Once the circuit is broken, the magnetic field in the primary winding collapses. At the same time, the current has a tendency to reverse its direction and arc across the breaker points. If this were to happen, the points would burn and insufficient voltage would be induced in the secondary windings. However, the condenser prevents this action by serving as an "electrical shock absorber," taking up the surge on current as the points break.

The condenser consists of two strips of lead or aluminum foil and a strip of insulating material. One strip is connected to a lead which connects into the primary circuit, and the other is connected to the case, which is grounded. In order to make the unit compact in size, the strips are rolled inside of a metal case. The condenser is connected across the points so that when the points are closed, the condenser is shorted out and is inoperative. When the points first open, the currents follow the path of least resistance, flowing into the condenser, and charging it. Thus, the break in the primary circuit is clean and abrupt, with no leakage across the points.

Now we have the voltage increasing in the secondary circuit, the breaker points getting further apart and the condenser becoming charged with an increasing amount of current. The voltage in the secondary circuit is building up sufficiently to jump a gap. Current is directed into the correct plug at the right time by the rotor in the distributor cap. The rotor is a bakelite arm which is mounted onto the end of the distributor

shaft. The bakelite, being a good insulator, prevents current from jumping from the shaft from the high tension lead. As the current leaves the coil it is conducted through a heavily insulated high tension lead into the distributor cap. The current passes through a carbon point in the cap which contacts a metal strip on the top of

the rotor. The other end of the contact extends beyond the end of the rotor. The high tension current must be of sufficient voltage to jump an air gap between the tip of the rotor and the contact point in the distributor cap. When this gap has been jumped, the current passes through the terminal in the cap and out through the high tension lead to the spark plug. The current enters the center electrode of the plug and follows down to the gap between the electrode.

Basically, a spark plug consists

now World Bestos

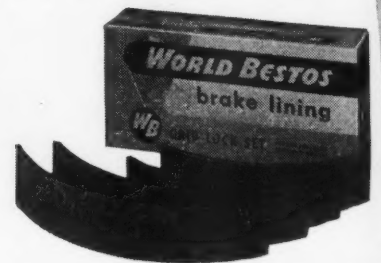
Brake Lining Engineered for HIGH HORSEPOWER CARS

New cars with higher horsepower and automatic transmissions require more stopping power . . . often call for different brake frictions and sizes on front and rear axles. World Bestos linings (both Dry Mix and Wireback) are now engineered to give that extra stopping power! WB uses seven different frictions to meet passenger car requirements alone . . . and all WB passenger car lining will be packaged in single axle, 4-piece sets to simplify stocking and handling.



"PRESCRIBED FRICTION" SETS

For passenger cars, commercials, taxicabs, trucks. A Dry Mix lining engineered for each specified vehicle. Also undrilled "PPF" Sets for bonding.



"GRID LOCK" MOLDED SETS

Wireback molded linings for all popular passenger cars, commercials and trucks. Also undrilled "PGL" Sets for bonding.

Also complete line of Brake Blocks for all types of Trucks, Trailers, Buses and Coaches.



of a metal shell, a center electrode and an insulator. The metal shell screws into the cylinder head, and the ground electrode is an integral part of the shell. The center electrode carries the high tension current which fires across the electrode gap, and an insulator prevents current leakage between the center electrode and the shell. Compression in the cylinder combustion chamber increases the resistance of the air through which the sparks must jump. Therefore, before the current will pass from

the secondary windings of the coil, through the high tension lead into the contact in the distributor cap, the voltage must be high enough to bridge the high resistance of the air gap. When the spark takes place, the charge in the combustion chamber is ignited, forcing the piston down and revolving the crankshaft. The plug will fire at various times with respect to the position of the piston in the cylinder, depending upon operating conditions. If the ignition were to take place as the pis-

ton reaches top dead center, the piston would already be on its power stroke while combustion was taking place. This is one of the primary reasons for the advancing of the spark. By having the plug fire before the piston reaches top dead center, combustion and the consequent expansion of gases occurs while the piston is still coming up, and while compression is increasing. Therefore, by the time the piston goes into its power stroke, the force of the expanding gases is greater and the engine is more efficient.

Unfortunately, it is impossible to have ignition timing fixed at a particular point. When starting an engine the spark has to fire later than when it is running at high speed, since it would otherwise tend to force the piston backward.

To control the amount of spark advance automatically, three methods are generally in use: the centrifugal advance, which is controlled by engine speed; the vacuum advance, which is controlled by engine load; and the vacuum brake, which is also con-

Middle age is that period when you don't care where you go, just so you get there by nine o'clock.

trolled by engine load. The centrifugal advance mechanism is generally used in combinations with one or the other of the vacuum-actuated units.

The centrifugal advance mechanism consists of weights which are mounted on pins connected with springs. As engine speed increases, the distributor shaft speed increases and the weights fly out, advancing the position of the rotor and the cam. As the cam moves ahead of its retarded position, it advances the spark. When the engine is first started, return springs hold the weight in the fully retarded position, making the engine easier to crank and consequently easier to start.

If a car is traveling on a level at high speed, the weights have flown out sufficiently to advance

(Continued on page 118)

→ gives you



**MORE
STOPPING
POWER**

for Today's Cars!

See your Distributor or write direct to:

WORLD BESTOS

NEW CASTLE, INDIANA

➡ **PERFECT** ➡ **WHEEL WEIGHTS** **FIT & STAY PUT**



The Double **3-Point Suspension does it!**

PERFECT Wheel Weights are made with a larger radius than the rim, so that when applied they create constant pressure at points 1-2 and 3 (shown above in top photo). Bearing points to prevent "rocking" are also formed at points 1a-2a and 3a (shown in small illustration).

Such a DOUBLE 3 point suspension principle prevents slipping—"rocking" and loss of weights. PERFECT'S "stay put"—they give SATISFACTION. That's why they're the world's largest selling wheel weights.

This principle applies to both the "C" and "U" type Perfect Weights.



"U" Type

Fits all passenger cars made before 1949 which had either E or F type rims. Still gives satisfaction on most cars manufactured up to present time. Made in the following sizes: ½- 1- 1½- 2- 2½- 3- 3½- 4- 4½- 5- 5½- 6-ounce.



"Special" Type

Made for all late model Cadillacs equipped with large chrome hub caps covering the entire wheel. Made in the following sizes: ½- 1- 1½- 2- 2½- 3-ounce.



PERFECT EQUIPMENT CORP.

804 W. Morgan St.

KOKOMO, IND.

P. O. Box 706



Manufacturers of Passenger and Truck Wheel Weights — Coil Spacer Rings — Caster Shims.

Ignition System

Continued from Page 117

the spark. If the car comes to a hill, the driver must increase power to maintain his speed. The increase in power increases the compression in the combustion chamber, and since the engine speed is high and the centrifugal mechanism has caused greater spark advance, the engine will ping under heavy load. To compensate for this, either a vacuum brake or a vacuum advance unit is used with the centrifugal advance.

The vacuum brake is a piston-actuated mechanism which receives its power from the intake manifold. Its purpose is to act as a brake to retard the action of the centrifugal advance under heavy loads. Under low vacuum conditions a spring overcomes the low vacuum in the intake manifold to cause a brake shoe to press against the movable centrifugal advance plate. This retards the spark with relation to the engine speed, striking a "happy medium" between speed and load at all times. Once the car is on the level, vacuum overcomes spring tension. The vacuum brake is released and the centrifugal unit is allowed to advance the spark.

The vacuum advance diaphragm type mechanism advances the spark by a different method. It varies the ignition timing according to loads by rotating the breaker plate about the cam. On some makes of cars a vacuum advance mechanism rotates the entire distributor housing including the breaker plate, with the same purpose accomplished in either instance. When the engine is under light load, the vacuum retracts the diaphragm which is linked to the breaker plate. This moves the points to an advanced position with respect to the cam. The two vacuum units are the same in principle, but different in design. One uses the piston to actuate a brake, while the other uses a diaphragm to rotate the breaker plate or distributor housing.



Fall Filter Change now underway

TIME TO CLEAN UP on Purolators! During the next 60 days—sell a Purolator* Oil Filter . . . plus an extra quart of oil to every motorist who comes in . . .

Now until cold weather really hits, is Fall FILTER-CHANGE Time.

Make a clean sweep! Sell every customer!

Time now . . . for you to replace every dirt-filled oil filter with a clean, new Purolator.

You can! Because advertising—millions of dollars of it—is working for you—selling motorists on getting set for winter . . . Powerful Purolator ads in Saturday Evening Post, Life,

Look, Popular Science, Popular Mechanics, farm magazines . . . Tested, proved Purolator displays, posters, streamers at point-of-sale.

Double your oil filter profits!

You can! Because every Purolator Micronic* Oil Filter you sell carries a handsome profit . . . So does the extra quart of oil needed to take the place of the dirty oil that goes out with dirty filter.

Remember: (1) *More makes* of cars are Purolator-equipped. (2) All filter-equipped cars take Purolator. (3) Purolator sales grow—and grow—because Purolator filters more dirt, finer dirt, faster—do a better all-around job.

Check your supplier for stock *now* . . . also for special fall Purolator promotion material.

MAKE A CLEAN SWEEP

SELL EVERY CUSTOMER THAT COMES IN . . . YOU CAN!

PurOlator

World's finest **OIL FILTER**

PUROLATOR PRODUCTS, INC., Rahway, New Jersey
and Toronto, Ontario, Canada.



*Reg. U. S. Pat. Off.

He walked around her some more feeling of the tires and checking the shock absorbers—in case she had any. He didn't quite know one end from the other, but she was a good truck, he felt that. "Give you \$490 cash," he grunted, trying not to be overanxious.

"Sold," shouted Jim, a bit too hastily, for Hon quit chewing on the match while he re-examined

the radiator.

"With a tank full of gas," Hon added quickly.

By this time Jim had caught on. He hesitated just long enough to make Hon wonder about his bargaining prowess. "Oh, all right, Hon. But you're a shrewd one."

And that's how Hon happened to drive the International up to the Butler town house last week.

But Minnie was not amused. "What do you think of her, Minnie? As fine a truck as I ever did see."

"Benjamin Butler, what have you bought?"

Ben removed his blue felt hat and slipped on his favorite straw, beaming in every muscle. "Why, Pet, this truck will haul hay and live stock and even passengers. Just what I needed," and Hon looked up sheepishly in spite of his bravado.

His wife face lengthened; her eyes narrowed; her chin protruded to the saving-of-souls angle. "Benjamin, you have let me down. You have gone and bought a truck for those Jersey cows. Why, I never could ride in it."

Only the squeaking of Minnie's rocking chair told Hon that she was waiting for an explanation. "Don't you want to try her out?" he ventured, finally.

"Indeed not. I will not play second fiddle to your Jersey cows, Benjamin, and it's plain to see you think more of their comfort than you do of mine." Minnie relapsed into an old Temperance tune, and Hon knew the trick was up.

"You're going to let a truck come between us, Min?" he queried soulfully.

"It's not a truck. It's thirty Jersey cows," snapped his spouse.

Hon climbed the running board and flopped down behind the wheel. Now Hon Butler was a patient fellow. His experience with cows had taught him the gentle touch. But somehow the technique did not carry over to a jealous spouse. "I'm off, woman, for the farm," he shouted defiantly, and he was gone in a cloud of dust.

If Hon Butler had not been a man of his word, he would have stopped at Joe's for a little diversion. But he had taken the pledge. Besides, Joe had instructions not to sell him any. And besides the Jerseys needed to be milked.

So he nearly got to the farm. At least he pulled into the barnyard, when the truck stopped dead. And no amount of cursing would start her. Hon left her there while he went for the cows.

(Continued on page 124)



JOHNSON BEARINGS AND BUSHINGS
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THE new JOHNSON BEARING CATALOG is ready, listing bearings and bushings for starter, generator, water pump, automatic transmission, steering knuckle, chassis and other applications. Adding this to the Johnson Engine Bearing Catalog will give you complete information on Johnson Bearings for every automotive need.

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JOHNSON BEARINGS
Sleeve-Type

NEWEST, LARGEST, MOST ADVANCED OF ALL AUTOMOBILE PROVING GROUNDS NOW IN OPERATION



Chrysler Corporation engineer checks acceleration on rough hillside of endurance track

Sections of the newest and most modern of all proving grounds—the Chrysler Engineering Proving Grounds, Chelsea, Michigan—are already in use in scientific engineering testing of Chrysler Corporation cars. Official opening is still some months away.

Around the clock, engineers are putting cars through exhaustive and grueling endurance tests over the proving grounds roads and tracks. The endurance road is now 8.5 miles—will be 10.5 miles when completed—with surfaces typical of roads found all over the country. The high-speed oval test track is the world's largest and fastest.

A normal test is 10,000 miles of fast, all-weather, day-and-night driving. Chrysler-built vehicles and all volume-produced makes of American cars are tested side by side.

So punishing is the test run that it discloses points of wear in less than a tenth of the mileage that would be required under normal driving. In minimum time this endurance testing helps Chrysler Corporation engineers strengthen each part, and lengthen the lifetime of the cars.

On the new proving grounds all Chrysler Corporation cars must pass performance, speed, acceleration, hill-climbing, steering, braking and safety tests. And do it with flying colors.

Even the latest electronic precision instruments are used to measure performance variations to the smallest degree so that Chrysler Corporation engineers can design constantly better cars for you.

Chrysler's new proving grounds is the largest in the world—three miles

wide by two miles long and covering 3800 acres of the most difficult driving terrain man can devise. More than two million cubic yards of earth had to be moved to build it—the largest private earth-moving contract ever let in the State of Michigan.

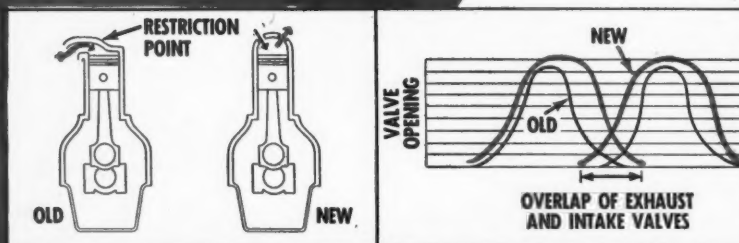
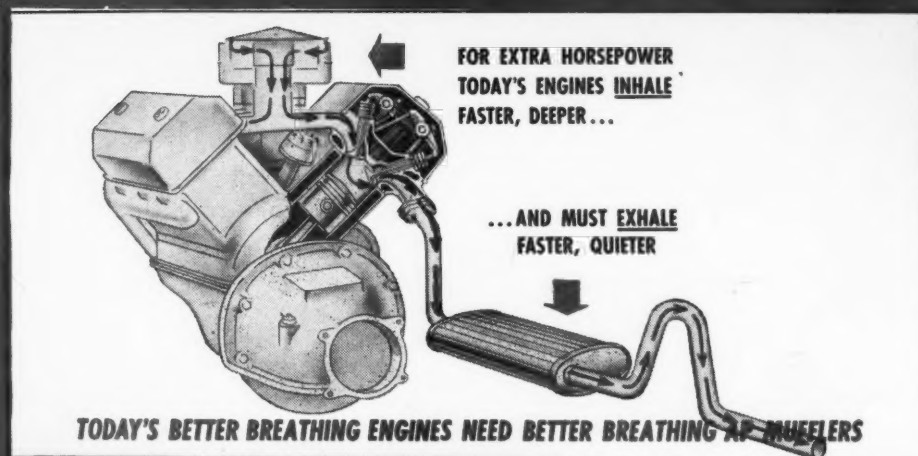
A mammoth garage provides service and shelter for 100 test cars.

Chrysler Corporation officials make it clear that these new proving grounds will not substitute for the well-known road-testing program that has been going on for years, and which last year piled up a total of three million car miles. That program will continue—in all parts of the U. S. and in Mexico, Canada, and Alaska. These new facilities permit even more thorough engineering of Chrysler Corporation cars, and promise important advancements.

CHRYSLER CORPORATION
PLYMOUTH • DODGE • DE SOTO • CHRYSLER & IMPERIAL

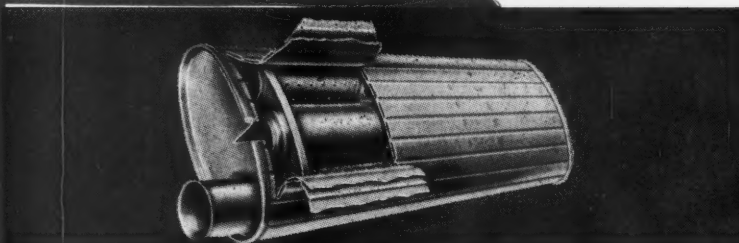
The Secret of Today's HP is Better

Don't Strangle Them—Insist On **AP** Better



New engines breathe deeper because bores are bigger and because overhead valves remove restrictions of L-type heads, permit both incoming mixture and exhaust to travel faster.

Exhaust and intake valves are open longer at the same time, thus causing tremendous "run-down" noises creating new muffling problems—which have been solved by AP engineers.



Now exhaust problems of today's better breathing engines are solved by better breathing AP Mufflers. "Fenced-in" silencing (use of air spaces between shells) absorbs new shell sounds; noises caused by bigger exhaust valves are quieted by more high frequency tuning; sounds due to longer opening overlap between intake and exhaust valves are silenced by improved low frequency chambers.

More *horse* power

More *sales* power

with

AP

Breathing Engines!

Breathing Mufflers

Power in today's engines has been increased principally by using a larger air-gas mixture—in other words, by deeper breathing.

But this creates new problems of exhaling or exhausting. The larger amount of faster moving gas bangs into the muffler with a loud rap. At the same time, bigger exhaust valves open with a boom. Finally, a longer overlap between the opening of intake and closing of exhaust valves adds more noise.

But AP engineers, working in cooperation with car factories, have the answer—a better breathing muffler which exhausts the increased air-gas mixture faster, quietly and with less back pressure.

Shell noises are reduced by "fenced-in" silencing—ribbed shells which create sound deadening air spaces between shells. "Boom" due to bigger exhaust valves is quieted by short chambers between an inner and intermediate shell. Sounds due to longer valve overlap are silenced by larger, better positioned low frequency chambers.

Today's better breathing engines need these better breathing AP Mufflers. Contact your AP jobber now.

THE AP PARTS CORPORATION
1582 AP Building • Toledo 1, Ohio
Manufacturers of: MUFFLERS • PIPES • MIRACLE POWER • dgf 123



Service Suggestions

Continued from Page 72

Tips on Care of Genuine Leather Upholstery

Here's what experts recommend for care of genuine upholstery leather.

First, they point out that genuine leather is a natural product and as such has a tendency to wrinkle. But such wrinkles or creases occurring in service do not detract from the wearing qualities.

But these wrinkles can gather dust and dirt which will eventually cause damage. In this case cleaning, as follows, is best: (1) Apply a damp (not wet) cloth to mild soap and rub surface of leather briskly. (2) Apply—in the same manner—a moist cloth without soap. (3) Rub dry with clean, soft cloth.

Such gloss as may disappear during the first two operations will be restored by the friction produced by the dry cloth.

For the occasional accidents that require special care, leather experts outline specific treatment.

Mildew: When leather is kept dry, it will not mold. Of the several products that prevent mold growth, paranitrophenol in oil is one of the best. Since molds prefer acid conditions applications of soap suds discourages mold. Mold should be cleaned off with mild soap and the leather should be allowed to dry in the sun.

Perspiration: Wash with mild soap, and if excessive perspiration is present, wash with baking soda, 1 teaspoon to a glass of water.

Oils: Clean off, then apply mild soap suds.

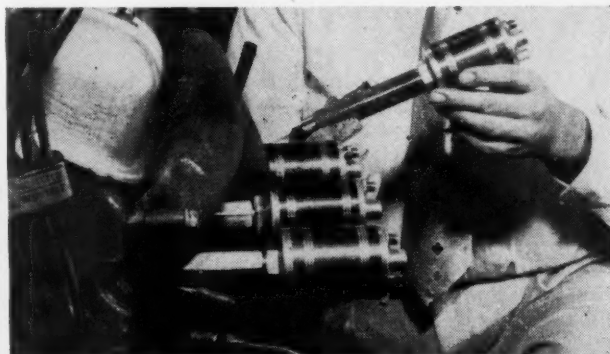
Acids: Immediately apply a mild alkali—teaspoon baking soda to a glass of water is ideal. Wash with mild soap after acid is neutralized.

Blood: Remove with cold water, soak well and remove with clean soft cloth. Then wash with soap.

Alcohol: Wash off at once with mild soap suds.

Regular polishes and cleaners, naphtha, furniture polishes, oils, varnishes, or household cleansing and bleaching agents are unnecessary and should never be used on genuine leather.

Color in upholstery leather is not a dye but a special lacquer that is applied to the surface fibers. This lacquer flexes with the leather in use and provides a permanent finish in almost any color desired.



Factory Method of Exhaust Gas Analysis

Tiny valves beside special small spark plugs trap exhaust gases in this new test method in the Ford laboratories. Carbon dioxide content is checked in thirty minutes instead of two and a half hours.

Now all might have gone well had Hon's young bull been a little more open-minded about red trucks. But that young bull was suspicious the minute his eye caught the strange animal on his domain. And the more he examined the machine, the more angry he became. He decided to fight.

That bull had better aim than

any Sunday driver you ever saw. He went for the left headlight, and he smashed both the headlight and the fender with one charge. The swinging red door caught his eye. He got that too . . . rammed a stub of a horn clear through it. When he got through with that red truck, there was no fight left in the machine. The door quit

swinging because it had left the hinges, but not without its toll. Blood stains from a prize bull gave evidence of the bitter battle.

When Hon finished the milking, he came out to inspect the stalled truck, soon figured what had happened. He cursed the truck for being so red and so inviting to brindle bulls. Then he shut the bull up and headed for the starter. Behold, the machine started as nicely as you please.

Hon Butler headed for town in the remains of his red truck, wondering if his insurance covered such damages. But just inside the city limits the thing stalled again.

This time Hon called the first service station he could find. This one was the kind that does everything to anything without benefit of intelligence or equipment. The

ONE NAME THAT MEANS everything FOR SAFE LUBRICATION

SOUND YOUR Z
100% Pure Pennsylvania
PENNZOIL
Safe Lubrication

Cash in across the board with PENNZOIL

Products shown include: PENNZOIL OUTBOARD MOTOR OIL, PENNZOIL 100% Pure Pennsylvania MOTOR OIL, PENNZOIL 100% Pure Pennsylvania GEAR LUBRICANTS, and PENNZOIL HYDRA-FLO AUTOMATIC TRANSMISSION FLUID TYPE A.

Pennzoil—accepted from coast to coast as the sign of quality motor oil—offers you a ready market for the complete line of Pennzoil products.

Pennzoil quality satisfies the most exacting customer, answers every lubrication need. It means a fast-selling, low-investment "one-brand" lubrication inventory. And proved Pennzoil merchandising programs, together with consistent nationwide advertising, create extra profit opportunities by developing new customers—steady customers.

Don't miss these profits! Get the facts from your nearest Pennzoil distributor or write us for his name today.

THE PENNZOIL COMPANY • OIL CITY, PA.



"You're so romantic, Harry—I love parking by candlelight! . . ."

service truck came out, but the temptation was too great. The bright young boy decided that the ignition was all shot. So he proceeded to overhaul (replace, rather) most of the system. Before you could catch a rat in the corn crib the boy had slapped on new points, a condenser, six spark plugs. He thought the cables needed a good replacing but unfortunately he had neglected to bring a new harness.

But lo and behold the truck started, and Hon once more gravitated to his usual good humor. He paid the bill and headed into town.

Down by the feed store she
(Continued on page 128)

INDEPENDENT SERVICEMEN...

Make use
of these 4
Big Helps!

from
your Chevrolet dealer,
your partner in service!



A well-rounded stock of precision-made
Chevrolet service parts

that will

Help raise your service efficiency
to new high levels

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Help to make more satisfied customers

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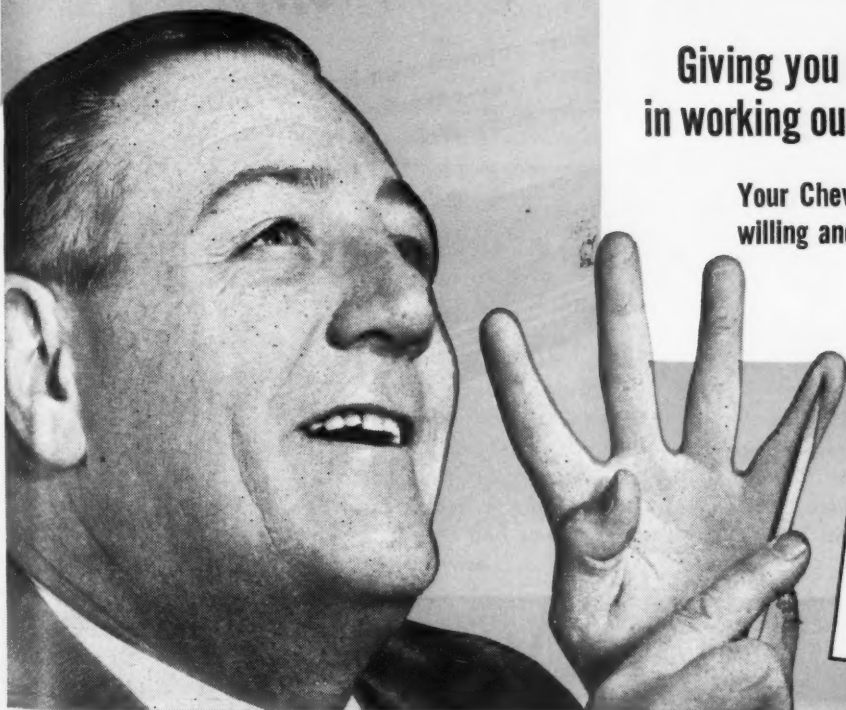
Giving you expert help and advice
in working out tough service problems.

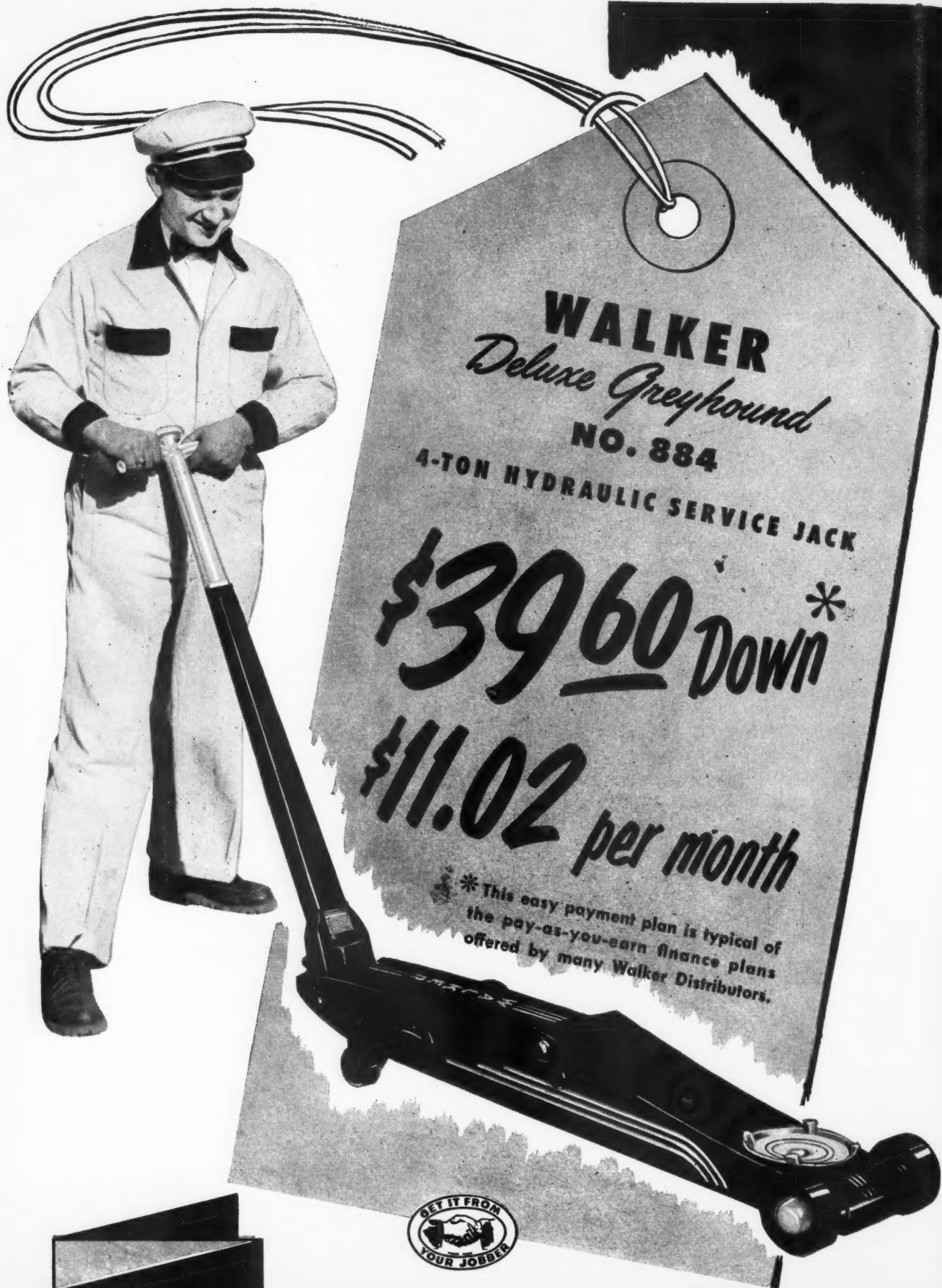
Your Chevrolet dealer is ready,
willing and able to give you all

4

Parts Advertisements in LIFE
are your Fifth Big Help!

The special parts campaign now
running in LIFE is designed to tell
millions of readers and Chevrolet
owners that genuine Chevrolet parts
are available at leading independ-
ent service stations everywhere—
places just like yours.





WALKER
Deluxe Greyhound
NO. 884
4-TON HYDRAULIC SERVICE JACK

\$39⁶⁰ DOWN*
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* This easy payment plan is typical of the pay-as-you-earn finance plans offered by many Walker Distributors.

GET IT FROM
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WALKER MANUFACTURING CO. OF WISCONSIN • RACINE, WIS.

Why wait? you can pay for your NEW WALKER GREYHOUND JACK as it earns money for you!

Don't put off owning that new 4-ton Walker "Greyhound" you need so badly. This fine, powerful hydraulic service jack with its famous "Gold-Seal" power unit can be yours RIGHT NOW . . . on an easy budget plan. No need to tie up capital . . . no need to wait.

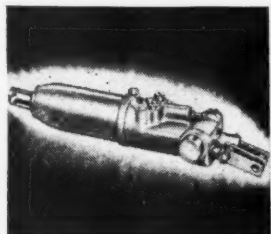
Most Walker distributors offer convenient, pay-as-you-earn finance plans which will put this great jack on your service floor for only a few dollars down . . . and a few cents a day. It will pay for itself as you use it through labor savings—and faster, more efficient, safer service—and you've never used a finer service jack. The No. 884 Walker "Greyhound" is a masterpiece of hydraulic jack engineering. Its smooth, dependable 4-ton "Gold-Seal" hydraulic power unit handles all but the heaviest trucks with ease and safety. It's the ideal jack for any shop with a wide range of traffic.

Ask your jobber salesman about the easy-to-handle, convenient, pay-as-you-earn finance plan he has to offer—and get your new Walker "Greyhound" now.

Walker leads

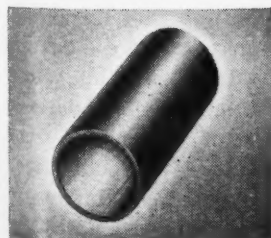
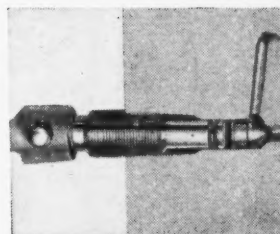


in Jacks



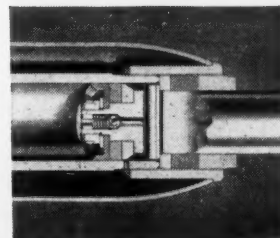
"Gold-Seal" Power Unit . . . the finest hydraulic power mechanism for service jacks ever developed. A triumph of hydraulic engineering representing the accumulated experience of over a quarter of a century of jack building.

Self-Centering "Finger Tip" Control . . . means new ease of operation . . . new margins of safety. Ingenious, self-centering device prevents valve seat wear and eccentric bending. Permits easy, positive valve action and control of lowering speed.



"I.S.D." Power Cylinder . . . I.S.D. Means *increased surface density*—a revolutionary new finish for the inside surface of the seamless carbon steel power cylinder that assures greater wear resistance . . . and smoother trouble-free service.

Filtered "Hydra-matic" Relief Valve . . . removes one of the most frequent sources of jack failure—cup washer scoring. Also prevents the "build-up" of excessive oil pressures at top height. Intake port filtered against foreign material.



... Serving the Automotive World with Jacks, Silencers and Oil Filters

Pop O'Neill Continued from Page 124

stalled again, and this time Hon called an all-night garage, who willingly towed him across town for the small sum of five bucks. Mr. Butler was becoming a little peeved at things in general by this time. Had the errand not been for his best Jersey cow, who needed a little supplementary ration, there is every reason to be-

lieve that Hon might have left her there in the street to rust out.

The garage decided that the fuel system was all fouled up. So they installed a new fuel pump and a flexible fuel line, and darned if she didn't run. Hon climbed in and headed for home and his distracted wife.

Two blocks from the Butler

house she balked again, and neither coaxing nor cussing would change her mind. But Hon was ready to call it quits. He opened the door with his foot and headed for Joe's.

Once there the farmer gleefully plugged in his dime and called Pop O'Neill out of bed. Between curses Pop got the idea that some mechanics had fouled up the International pick-up. He promised to go after it next morning. That was the last anybody heard of Hon Butler. He simply disappeared.

Next morning Pop told Larry to go get the truck. But the state police, who were flocking over the damaged vehicle like hungry pigs after their respective dinners, would not let him move it. "There's been an accident," they said. "You can tow it to your garage after we get fingerprints."

"What do you know about the whereabouts of Benjamin Butler?" the chief asked Pop O'Neill. He told them the story and Hon's last message, and they looked blank as a Jersey cow.

At 2 o'clock that afternoon Larry was permitted to drag in the truck. "You can fix the engine if you want, but don't repair any body damage until more checks are made," the trooper said.

"And, for God's sake, get this woman out of our hair," he added. "Mrs. Butler has been haunting our steps all the blessed morning. She is sure there has been foul play. And she's been blaming herself for the accident. Now how do you figure that?"

Pop shrugged, "I'm an independent shop owner. Can't even understand my own wife—and I've had thirty-three years to learn," he said. But he did take a short ride across town, "Just to case the situation," he said.

With the bull-damaged and mechanic-forged truck in the garage Pop examined the night's work. "Somebody's made a good take out of this one," he mused over Larry's shoulder. "Some of these outfits insist upon replacing every part that will come loose and then hope they've found the trouble."

"Looks like a complete new ignition system and new fuel pump."

(Continued on page 130)

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in EVERY size service shop...

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\$3,257⁰⁰
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in one month

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The use of SUN Scientific Automotive Testing Equipment can result in a remarkable increase in needed labor and parts sales as indicated in these examples selected from among thousands of dealers and service shops all over the country. Just as important is the customer confidence gained through the elimination of costly comebacks and chronic complaints. Your SUN Equipment gives the service salesman an extra selling tool that helps him to show the car owner exactly where, why and how needed repairs should be made. The SUN Line is complete—enabling any dealer or service shop to have exactly the right units to fit his shop needs. Newly engineered 6-12 volt equipment is now available or your present equipment, through the SUN Modernization Program, can be quickly converted to serve vehicles of both voltages. Talk to your nearest SUN Representative or write TODAY directly to SUN.

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*names on request

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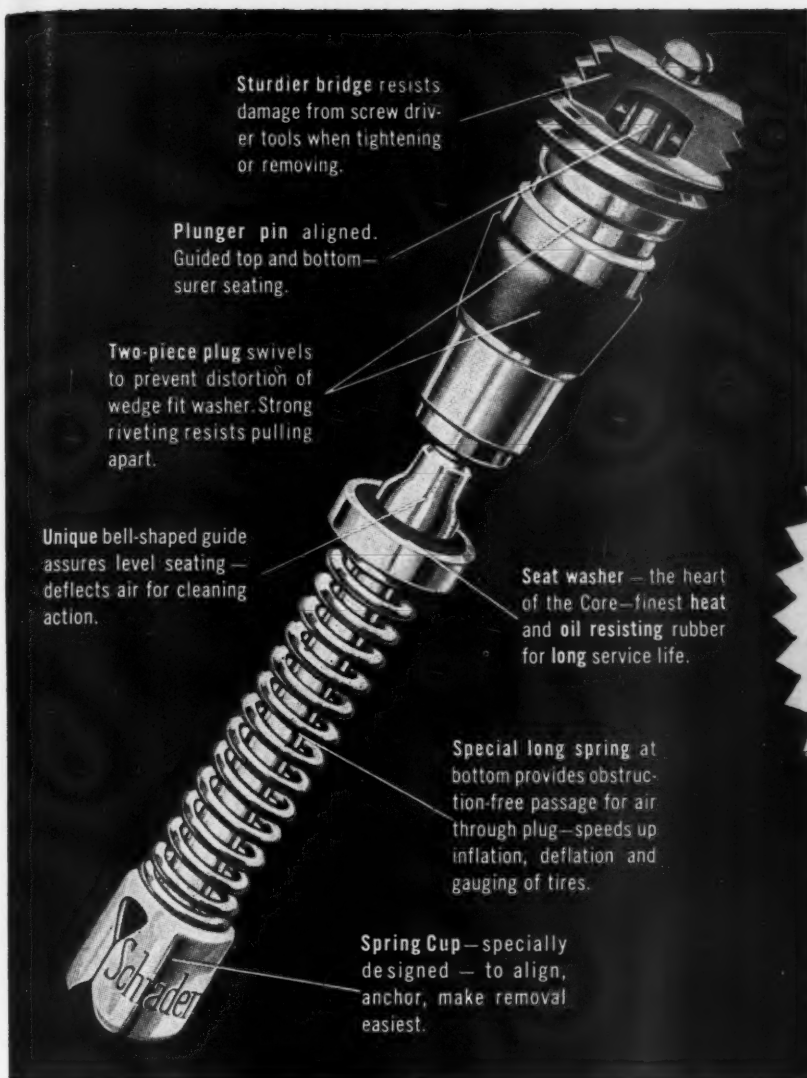
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SUN ELECTRIC CORPORATION
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**Best tire
performance
demands**

**FIRST
QUALITY**

**Replace with
Finest Quality
SCHRADER
Valve Cores**

FOR GREATEST SAFETY, longest service life, quickest inflating, deflating and gauging, always use and sell Schrader Tire Valve Cores . . . you know your customers are getting the finest precision-made product at this vital point in any tire.

Seal every tire valve with a genuine Schrader Valve Cap . . . the Cap with the spring action *Sealing Unit* that swivels inside the metal shell . . . guaranteed AIRTIGHT up to 250 lbs. pressure.

Your supplier carries the complete Schrader line, including tire gauges, valves, valve repair tools and airline fittings. Order your needs from him today.

A. SCHRADER'S SON

Division of Scovill Manufacturing Company, Incorporated
470 Vanderbilt Avenue, Brooklyn 38, N. Y.

Schrader

REG. U. S. PAT. OFF.

FIRST NAME IN TIRE VALVES

FOR ORIGINAL EQUIPMENT AND REPLACEMENT



Buy Schrader Cores and Caps in bulk for tube repair. Display and sell 'em in replacement sets of five.

Wonder if the carburetor wouldn't come off?"

Pop grunted, "And still they didn't guess the trouble. Got any ideas, Larry?"

"Well, we can assume that it's not fuel trouble or spark trouble at least at those points. So let's go on from where they left off."

Pop looked hurt. "Let's not as-

sume nothin'. We'll check their work from the ground up."

"I'll get the analyzer and we'll have a look," and Larry was off to the work bench.

Carburetion proved all right. Fuel flow was OK. Timing checked. Distributor proved out. "Well, at least those boys got the parts in. I was beginning to doubt if

they could set the points right," Pop scowled.

"There's something happening when this thing heats up," Larry mused. "Each time Hon had trouble, it stalled after a run or in traffic."

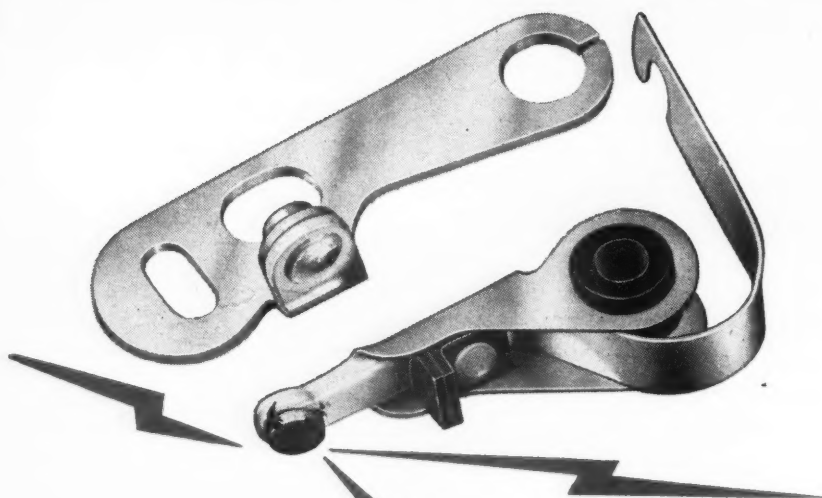
"Let's check—let's *you* check for resistance in the primary circuit," Pop suggested.

"What? Now how could high resistance affect the spark when we've got plenty of spark at the plugs?" Larry queried. "That looks like 'busy-work' to me, Pop."

"Then get busy and bring the voltmeter," the old man growled.

Reluctantly, Larry set up the instrument and sure enough he found .7 volt drop across the primary circuit between the starter post and the distributor. He followed it up, locating a loose wire at the ammeter post. "Don't bother

NIEHOFF PARTS SPARK WINTER PROFITS



PERFECT FIT for quick installation in every major ignition system is a Niehoff parts characteristic that pays triple dividends: Saves time costs, speeds job completions, wins you permanently contented customers. Get the Niehoff Dealership story. It's building top business for more than 42,000 profit-wise shop operators coast to coast.

NIEHOFF PARTS
fit every make and model
of popular cars, trucks,
buses and tractors

SEE YOUR JOBBER NOW
NIEHOFF Warranted IGNITION

C.E. **NIEHOFF** & CO. 30th Anniversary Year
4925 Lawrence Ave., Chicago 30, Ill.

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New York 19, N. Y., 250 W. 54th St.



with a sermon at this point, Pop. I should have thought of that one myself."

"Well, then, don't forget that a little analyzing ahead of the analyzer may save you a lot of time on some of these sticklers," Pop said. "Guess I'm just lazy. I'd rather think some of these things out than go to all the trouble of running up a dead alley with a wrench."

"Did you say 'wench,' Pop?"

"You heard me."

The phone rang, and Minnie wept into Pop's ear for forty minutes. "I just know that Benjamin has been run into by a hit and run
(Continued on page 134)



Winter-ize the Windshield too!

1

with
Trico's
NEW
Arctic Blade



2

with
Solvent
for the
Washer



WHEN a car owner asks for radiator anti-freeze, that's the psychological moment to suggest a new Trico Arctic Wiper Blade for his windshield — and Trico Solvent for his Washer.

Trico's new Arctic de-ices itself as it wipes. Can't snow clog. When road splash hits the 'shield in freezing temperature, nothing but a hooded Arctic Blade will take the driver through. Perfect performance — when it's snowing, when it's raining. Fits curved and flat windshields.

You'll make your customer — and your cash register — happy when you sell this safe-vision team.



Trico All-Season Windshield Washer Solvent helps the Two Little Squirts do a better job winter and summer. Helps to "cut" oily dirt and traffic film from the glass. Slows down freezing and prevents jar breakage.



For a limited period, every carton of 24 bottles of Trico Solvent entitles you to this new E-Z Fill funnel for Washer refill, winter and summer. Ask your jobber.



Windshield Equipment

KESTER SOLDER BEST BY FAR

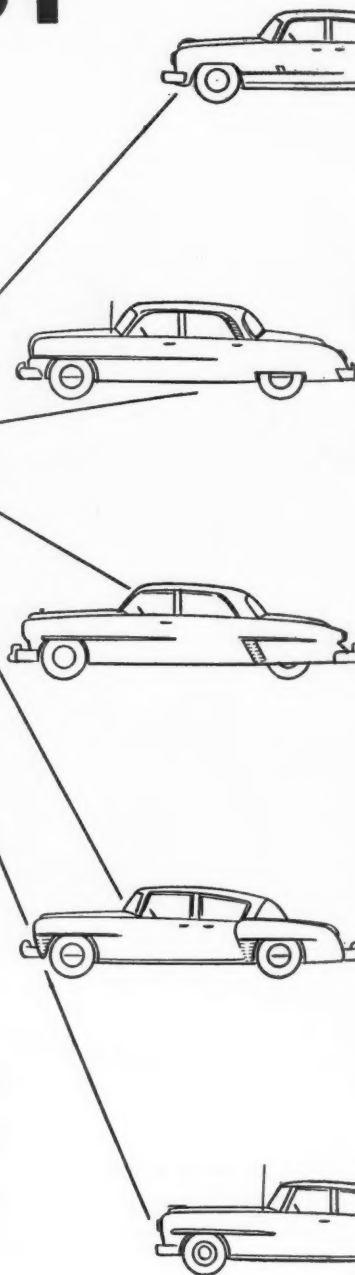


FOR EVERY CAR

KESTER SOLDER COMPANY

4242 WRIGHTWOOD AVENUE, CHICAGO 39, ILLINOIS
NEWARK 5, NEW JERSEY • BRANTFORD, CANADA

**KESTER
SOLDER**



'54 Dodge . . .

Continued from Page 39

making available the standard three-speed transmission, either with or without automatic over-drive.

PowerFlite combines a torque converter and a two speed planetary gearbox. It is claimed to be 100 pounds lighter than the heaviest competitive unit and contains some 110 fewer parts. PowerFlite transmission has a 2.6—1 starting torque ratio. This ratio, combined with 1.72—1 low gear, results in an overall torque multiplication at breakaway of 4.47—1. The two planetary gear sets are located directly behind the torque converter. These gear sets combine to alter the torque from the engine and converter and provide the various gear ranges.

If all the cars in the country were put end to end, ninety percent of the drivers would pull out to pass the car ahead.

A hydraulic control system, inside the gearbox, works the two brake bands and internal clutch. The control system also automatically selects the time for an up-shift or downshift of gears.

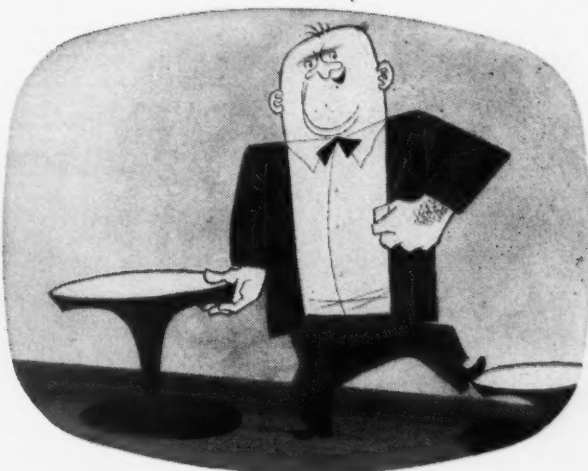
The 1954 Dodge introduces full-time power steering with direct control of steering linkage as optional equipment on all of its models—the Royal V-8, the Coronet V-8 and Six and the Meadowbrook V-8 and Six.

Dodge power steering operates in this manner: slight pressure on the steering wheel moves a valve which directs oil to one end of the power steering cylinder. Oil pressure, furnished from a pump, causes the cylinder to move the car wheels in the desired direction. The pressure of the oil does most of the work of turning. The power unit is connected between the steering gear arm and the tie rods, and anchors to the frame. Attached to the steering linkage itself, the unit affords more direct control of the front wheels. In the event of a power failure, full mechanical control of steering is maintained.

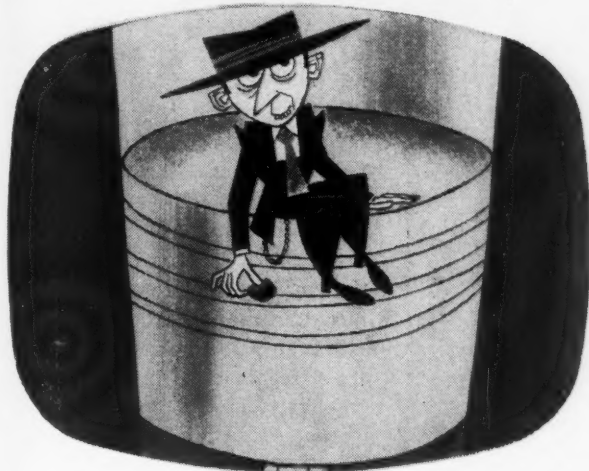
When these four criminals* stick up your customers...



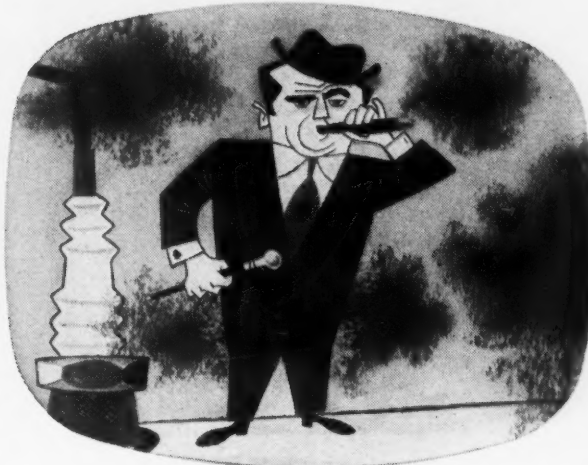
DIRTY SLUDGE



STICKY VALVES

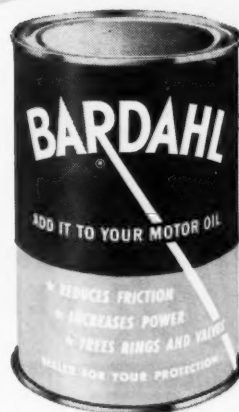


GUMMY RINGS



BLACKY CARBON

Call for Bardahl



BARD AHL:

SEATTLE • ST. LOUIS
Boston • Vancouver
Montreal • Mexico City
Oslo • Antwerp
Florence

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MFG. CO., SEATTLE

* Soon to be Seen in BARD AHL TV SPOTS from coast to coast. Don't miss 'em!

driver," she wailed. "And it's all my fault. Maybe he's lost his memory and I'll never locate him. And he was such a nice man, Mr. O'Neill. You'll never know how considerate he was."

"I wouldn't get too excited about all this, ma'am. I'm just a repair shop owner, but I'll get into this act and try to locate him for you." Pop ran an index finger over his

temple. "I think I know right where to look."

"If you are insinuating that my Hon would be sinning again, you can just go peddle your papers, Mr. O'Neill. Why, I would rather find him dead than drunk."

"Well, you will find him in both conditions, Mrs. Butler—dead drunk. I located him some time ago but I figured I could get him

straightened out maybe quicker than you. But go ahead now. You'll find him down on the courthouse steps, a bottle under each arm and one inside. But treat him kindly, I warn you, or you'll have trouble on your hands."

And Minnie Butler did a very strange thing—for Minnie Butler. She went after her husband, paid his fine and actually confiscated the bottles. "Next time, dear," she said, "when there's any drinking in this family, I want to be in on it. And we'll just take this home for seed. May I have a ride in your red truck now?"

And Hon Butler, man that he was—fool that he was—was very happy indeed.

'Relations' Experts Pledge To Support PAR Program

The campaign to encourage continued support of the American public in the nation-wide drive for adequate roads moved into high gear when more than 80 of the nation's top-level public relations executives met in a three-day session to determine and specify courses of action.

Designated by the Project Adequate Roads (PAR) movement as its Information Council, the group voted to establish subcommittees for the expansion and fulfillment of the PAR movement. Clem D. Johnson, PAR chairman, was authorized to name the committees' membership and announced that appointments will be made at a very early date.

NOW! GREATER CAPACITY for all kinds of automotive soldering



- Under-the-dash Work
- Instrument Case Soldering
- Gas Line and Tank Repairs
- Radiator Work
- Body and Fender Finishing



New WELLER Guns have all the features and power you've been wanting:

- Higher capacity for heavier work—Single or Dual Heat, from 100 to 275 watts.
- Instant heat saves time and current, pays for your Gun in a few months.
- Thermostatic Control—Instantaneous regulation of tip temperature.
- New floating balance for precision soldering—easy handling between wiring and in narrow spaces.
- Improved WELLERTIPS for soldering, plus cutting and smoothing tips for extra jobs.
- Prefocused Spotlights—Trigger-Switch Control—Shatter-proof Housing.

4 NEW MODELS

for all requirements—
from \$8.95 net price.
Order from your WELLER
Distributor or write for
bulletin direct.

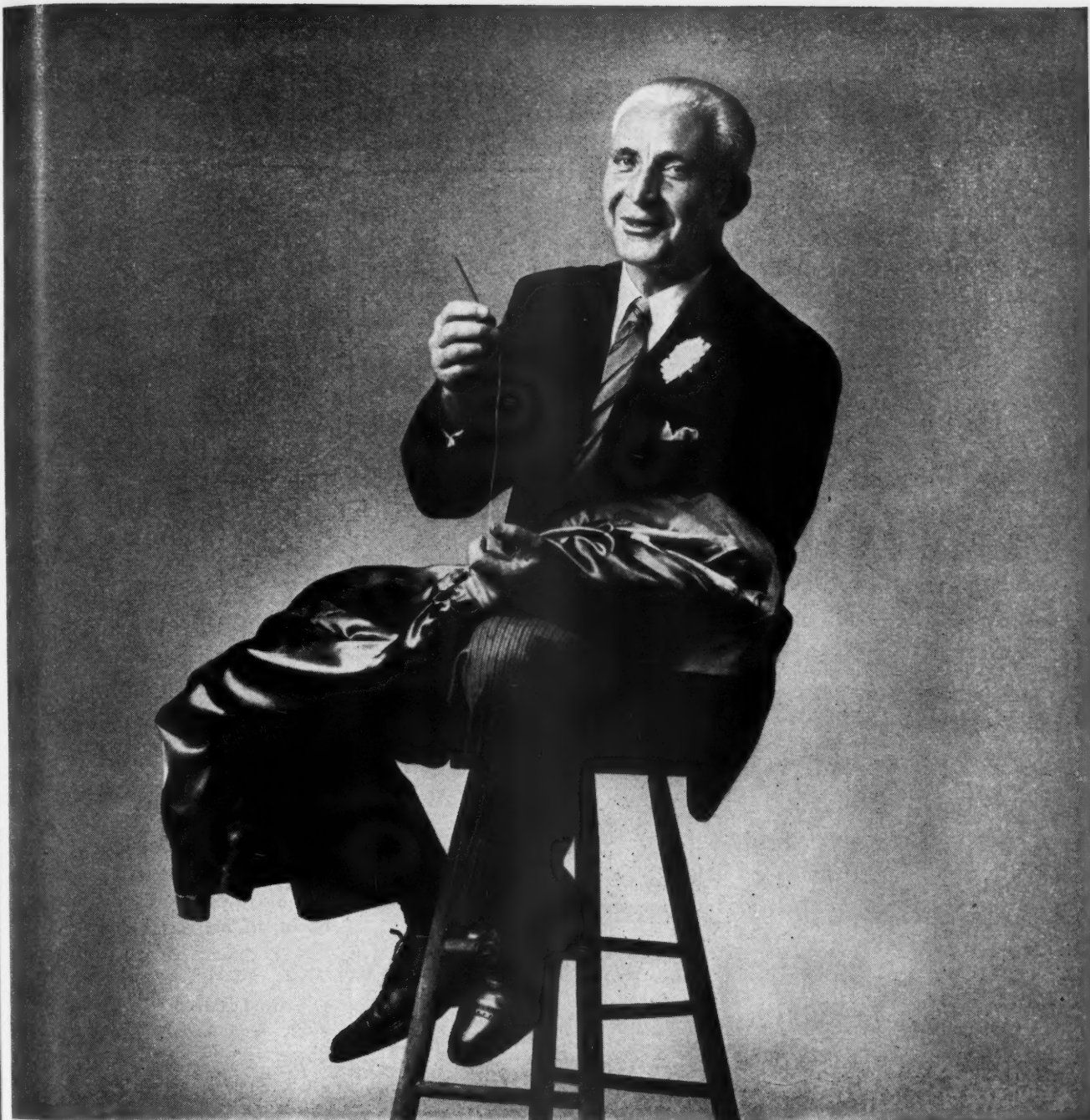
Weller Better from Grip to Tip
ELECTRIC GUNS

801 Packer Street, Easton, Pa.

THE FINEST TOOLS FOR THE FINEST CRAFTSMEN



"... I thought you packed the trunk too full!"



George M. Jolly, head of the Milium Division of Deering-Milliken & Co., tells how . . .

"We helped sew up \$500,000!"

"A Kansas City coat manufacturer had \$500,000 in sales sewed up—except for the linings! Buyers had flooded him with re-orders for 12,000 Milium-lined Fall coats. But the uncompleted coats were hanging in the loft.

"12,000 Milium linings had to catch up with 12,000 coats—and fast, too. We called in Air Express!

"As fast as the cloth was dyed and finished in New England, it was rushed to South Carolina and processed as Milium insulated linings, then speeded to Kansas City. Every deadline was met—and the deal was sewed up.

"Our customer's 12,000 coats were turned into a fast \$500,000—thanks to the speed and reliability of Air Express!

"We face frequent customer deadlines. We can't afford any air service but the *fastest* — there's too much at stake. Yet in most of the weights and distances we ship, Air Express rates turn out to be lowest in the field!"

It pays to express yourself clearly. Say Air Express! Division of Railway Express Agency.



Air Express



GETS THERE FIRST via U.S. Scheduled Airlines

New Products Continued from Page 67

tires and road surface meet. Adequate grit supply can be easily maintained—an indicator light on the dashboard signals the driver before replacement is needed.

454. Oil Pan Gaskets

Felt Products Manufacturing Company: Felcoid is the name of a new oil pan gasket material

which will not shrink or expand out of shape due to atmospheric conditions. Cork granules and vegetable fibers are combined, then treated by a special formula to make the material impervious to oil, gasoline and water. Felcoid is said to be so tough that you can bend it, flex it or fold it without affecting its sealing power.

Felcoid is made of semi-rigid material, which helps to keep it in place during installation. It will not distort the oil pan at bolt holes when normal torque is applied. It is quickly removed from the oil pan and comes off in one piece without crumbling. There is no need to scrap pan or block.

455. Radiator Test

Inland Manufacturing Company: The new model 50A Radiator Flo-Test machine is a device on the market by which a serviceman can determine if motor overheating is due to clogged radiators. The ma-



chine tests radiators on or off the vehicle. It reportedly operates on a single electrical outlet and has no messy drains or water connections. The flow capacity maximum is 76 gallons per minute and the reservoir capacity is 70 gallons. Specifications for the Flo-Test machine are 40 in. long, 40 in. wide, 64 in. high.

456. Fluid Dispenser

United Motors Service Division: A new, plastic, brake fluid dispenser that has no working parts is now being distributed. It holds a quart of water and has a 30 inch, flexible hose attached to a leak-proof top. A squeeze of the dispenser starts a flow of fluid into the master cylinder. When the pressure is released the flow stops instantly, sucking the fluid back into the dispenser, thus avoiding dripping and waste. The dispenser keeps the fluid clean and eliminates the danger of oil or other foreign matter from contaminating the brake fluid.

457. Motor Oil

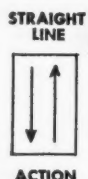
Meyer Oil Company: Cadol is a trade name for a pure engine oil that is said to give 100% motor lubrication under all conditions
(Continued on page 138)

FOR FINER FINISHES NATIONAL SANDERS

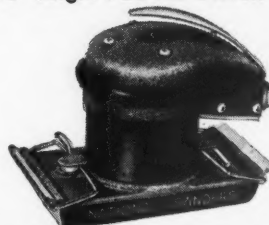
ORBITAL OR
STRAIGHT-LINE ACTION

AIR OR
ELECTRIC DRIVEN

NEW MODEL 600 Single-Pad Air Driven

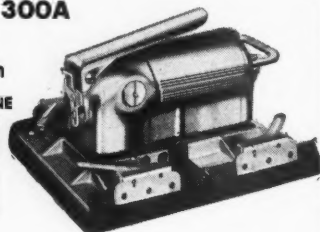
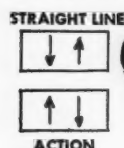


MODEL 100 Single-Pad Air Driven

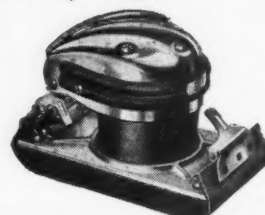


MODEL 300A

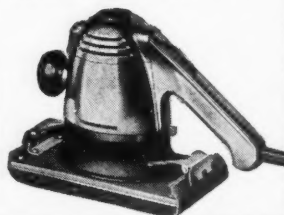
Two-Pad
Air Driven



MODEL 400 Mity-Midget Single-Pad Air Driven



MODEL 500 Single-Pad Electric



You can select the right sander for every finishing operation from National's Complete Line. Single or double pad, straight-line or orbital action, air or electric driven block sanders are all available from your National jobber. National sanders are made of the finest materials by expert craftsmen to give reliable, trouble-free service.



WRITE FOR NEW CATALOG

NATIONAL AIR SANDER, INC.
2820 AUBURN ST., ROCKFORD, ILL.

ZOLLNER

TROI

MARCH



137

New Products Continued from Page 136

and is unusually effective in hydraulic valve lift engines. According to the manufacturer, Cadol will not coke or sludge. It is non-corrosive, non-emulsifying and non-saponifying. It is said to prevent hard formations of carbon, reduce engine condensation, eliminate excess acidity and maintain an oil cushion between surfaces at

all times. It is said to increase power by decreasing engine and valve friction.

458. Battery Charger

Marquette Manufacturing Company: A light-weight, all-purpose portable battery charger for charging both 6 and 12 volt batteries has just been added to the



Marquette line. The new model 207 selenium-plate "SLO-FAST" charger weighs 15½ pounds, provides fast, slow and trickle charges to both 6 and 12 volt batteries. Marquette's full line now includes six different battery charger models.

459. Service Manual

Raybestos-Manhattan Incorporated: The 10th edition of the Grey-Rock Brake Service Manual has just been announced by the Grey-Rock Division of Raybestos-Manhattan. It consists of 56 pages and cover and includes complete service data on brakes for all makes of passenger cars from 1953 back as far as some 1933 makes. For the first time, data is included on power brake units for passenger cars. The section dealing with brakes for trucks, buses, and trailers has been completely revised and expanded. Vacuum and air brake "trouble-shooting" charts have also been expanded.

460. Air Jack

Supreme Equipment Corporation: The "Lifty" air operated jack is designed for use where



quick, labor-saving elevation of vehicles is important. The jack has wide sliding adjustable car-
(Continued on page 140)



DOLE DV THERMOSTATS

help restore smooth engine performance

Thermostats are small items—but don't overlook them. Check the thermostat on every motor tune-up job. Then replace with a new Dole Thermostat. Your customer will thank you for the improved motor performance. He'll be more likely to call again.

Replacement thermostats have a big market . . . millions of them every year. Be sure to get your share . . . and be sure you feature

Dole Thermostats . . . "tops" in quality and performance for 30 years.

protect your good name with another



Why "BEAR" is Announcing a Brand-New Service that Meets the Car Owner's Cry to "Do Something About the Egg-Shaped Tire Ride" "Balantru" Service

Here Are the ANSWERS to Your Questions About this Most Important New Profit Opportunity for You Since "Bear" Introduced Dy-Namic Balancing 15 Years Ago!

Q. What is "Bear Balantru" Service?

A. It is a service wherein out-of-round tires are Re-Trued and Dy-Namically balanced by "Bear" methods. Re-Truing is designed specifically to correct out-of-roundness, not out-of-balance. That is why the new "Bear Balantru" combination of the "Bear" Re-Truer and 36 Balancer is offered as a complete unit. This set-up makes it possible to balance and Re-Tru in practically one operation, without need for remounting.

Q. Why is "Bear" introducing Tire Re-Truing?

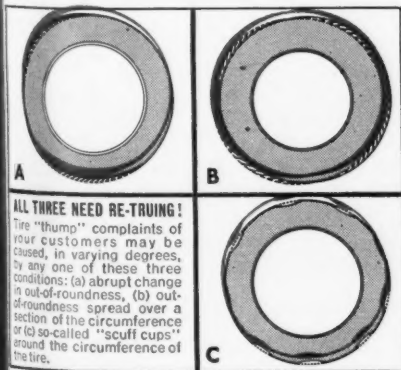
A. Because this new method is the only answer to the mounting demand of millions of motorists to get rid of tire "thump" and other mysterious vibrations due to out-of-round tires. This condition cannot be remedied by balancing alone.

Q. What is Tire Re-Truing?

A. Re-Truing is the "Bear"-developed method of gently evening out the circumference of an out-of-round tire by buffing off the high-spots one very thin layer at a time. So accurate and perfected is this method, and so unaffected is the tread or appearance of the rubber, that the naked eye cannot tell a tire has been Re-Trued.

Q. What is behind the ever-mounting increase of car-owner complaints about tire "thumping"?

A. Smoother black-top roads, more high-speed driving and more powerful, smooth-running engines all help to magnify vibrations of out-of-round tires, which formerly were hardly noticeable. Out-of-roundness is almost as prevalent on new tires as on tires which have been driven for 5 or 10 thousand miles.



Q. Why is it important, in terms of profits and good will, for shops to offer Re-Truing in addition to balancing?

A. "Egg-shaped" or out-of-round tires can ruin your balancing reputation, because balancing alone won't make them round. Dissatisfied balancing customers and do-over work caused by this situation are bad for your business.



Q. What is an Out-of-Round or "egg-shaped" tire?

A. An out-of-round tire is one which has a variation in thickness... a difference in the tread of the tire, and may show up in a rather abrupt difference in radius between its high and low points. This could be caused by a car standing in one position for a long period of time, uneven wear, etc. Any out-of-round conditions should be corrected by Re-Truing.

Q. Does removing rubber by Re-Truing decrease mileage?

A. The exact opposite is true. Re-Truing extends tire life because the tire will roll smoothly with no "thump," "slap," or "scuff" at any section of the circumference.

Q. To save time and to demonstrate quick operation, some methods suggest "truing" only the center ribs of the tire... Will this provide a satisfactory job?

A. No, it will not. The entire arc of the tread must be "trued." Low pressure tires ride more heavily on the outside ribs than on the center ribs. Tests show an average of only 10 minutes is required to perfectly true a tire with a "Bear" Re-Tru-It... only an average of 15 minutes to balance and, re-tru on the "Bear" Balantru!



SEND THIS COUPON FOR COMPLETE "BALANTRU" SERVICE STORY!

Bear Mfg. Co., Dept. M-1,
Rock Island, Ill.

I want to get in on the ground floor of this brand new profit opportunity. Please send me prices and profit-potential figures on "Bear Balantru" Service.

Name _____

Address _____

City _____ Zone _____ State _____

R. 370 Copyright 1953-Bear Mfg. Co.

riage arms with two parallel end brackets, which fit securely under the vehicle's front or rear bumper without danger of slipping. The "Lifty" jack can be used on all models of passenger cars and light pick-up trucks. Applying a standard compressed air tire hose chuck to the jack permits raising the front or rear end of a vehicle to

a height of approximately 30 in. from the ground to the bottom of the bumper.

461. Cuff Links

Electric Auto-Lite Company: A handsome spark plug tie clasp and a set of cuff links, styled by Hickok, are now available to its accounts through the Auto-Lite



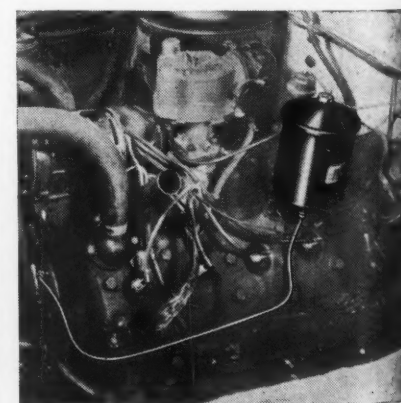
Spark Plug Division. The tie clasps and cuff links can be ordered separately or in combination.

462. Distributor Tool

K-D Manufacturing Company: K-D No. 112 is a new ignition point wrench for 1953 Chevrolet distributors. It removes and installs the lock nut on the movable point. The tool is made especially for this job, carefully machined and correctly tempered.

463. Oil Filter Lines

E. Edelmenn & Company: Immediate service for oil filter line replacements is now available for dealers with the new Edelmenn No. 481 assortment of "pressure Bonded" Metal Clad Oil Filter Lines and Adapters. Service men



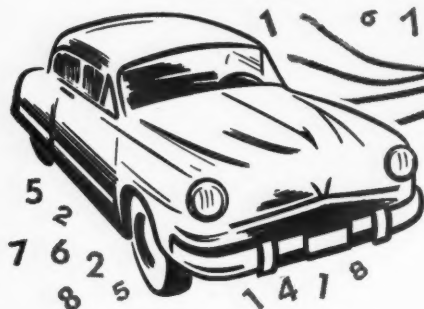
need do only three things to complete the job: (1) select length, (2) assemble adapters where needed, (3) install. This eliminates the need for cutting special lines and attaching fittings. Lines come in all lengths, from 9 to 28 inches, completely assembled, ready to install and clearly identified.

Chilton's MOTOR AGE, OCTOBER, 1953

Dealers Wanted!

**TO HANDLE A
CAR PROTECTION SYSTEM
THAT IS SOLD...**

NOT LEASED



**VICTOR
Start-O-Code
NEW...EXCLUSIVE
...TAMPERPROOF**

Now! With vehicle thefts reaching staggering proportions, here's a real opportunity to get in on the ground floor of this vast, highly profitable—yet untapped market—of reliable vehicle protection. Everybody needs it, most can afford it, and you can sell it—easily.

What's more, the Victor system of push-button, code control makes it more fool-proof than anything now on the market. It's easy to install . . . and no "after installation headaches."

We've got the product and we're all set to kick off our advertising promotion on a big scale. What we need now are enterprising

dealers who recognize a big profit opportunity when they see it.

Wire, phone, or write today for full information on how it works, what it means to you, and for your nearest jobber.

Once installed, the only means of starting car is to depress the proper four digit code in correct sequence. Tampering or depressing any incorrect button disconnects the circuit and sounds a continuous alarm.

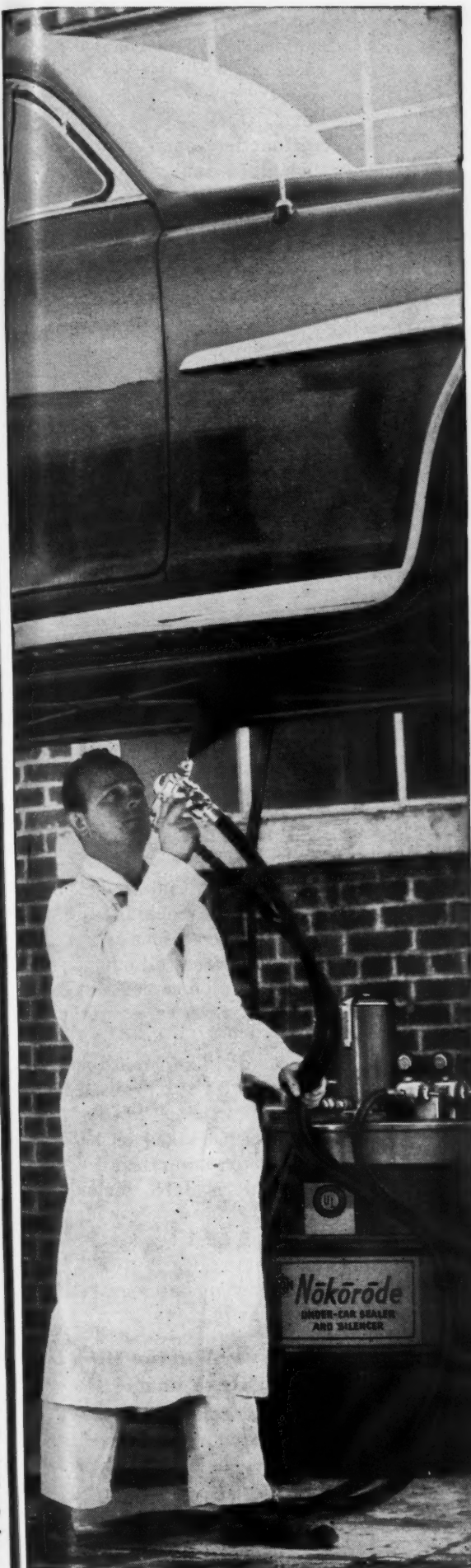


...THE SIGN OF VEHICLE SECURITY

VICTOR DEVICES, INC.

Phone... PRescott 9-1275 Blgelow 3-6899

836 VAN HOUTEN AVENUE · CLIFTON, N. J.



Get 50% More Profit ON YOUR UNDERCOATING JOBS

LION *Nokorode* UNDER-CAR SEALER AND SILENCER

1. 50% More Jobs Per Drum

Nokorode is *concentrated*—no excess solvent. You spray Nokorode to $\frac{1}{16}$ " thickness—and it dries to almost $\frac{1}{16}$ ". It's made *entirely* by Lion under U. S. Patent 2393774, assuring *controlled* uniformity, *controlled* quality. Nokorode goes 50% farther, yet costs no more than ordinary undercoatings. That means 50% more profit for you.

2. Easier Application . . . Lower Labor Cost

Nokorode is *uniform* for smooth application—no troublesome "blobs". . . flows freely, permitting steady pressure in the gun. There's no lost time due to lost pressure.

Nokorode is *stable*, made of highly compatible materials—won't separate in storage, won't clog guns or hoses. You avoid unnecessary clean-up jobs—you save man-hours and money.

Made and guaranteed by

LION OIL



COMPANY

EL DORADO

ARKANSAS

FREE! Details on how to increase
undercoating profit.

LION OIL COMPANY, El Dorado, Arkansas

Please send information on higher profits
with LION NOKORODE.

Name

Address

City

State

MA-7

Dynaflow Continued from Page 55

comparatively easy.

Bear in mind that if the oil reaches the direct drive clutch with sufficient pressure the car will move in drive range even if the clutches are in very bad condition.

Remember also that the purpose of the accumulator is to ease the transmission into the gear which

was selected manually and, unless it leaks badly, it has no effect on the performance in any range. Either the low or high accumulator is at fault when the car jolts into any of its ranges.

When shooting trouble, it is generally considered wise to check all ranges before completing your diagnosis. Certain causes can be

eliminated, and other functions can be proven correct if a routine check is made. For instance, suppose the car will not move in any range. Obviously, the cause is a malfunction common to all ranges such as a faulty front pump, a clogged suction screen or a bad seal at the suction pipe to servo body seal.

If a car is O.K. in Drive range but not in Low the cause must be something which functions in Low range but not in Drive, such as the low servo or low band. Consequently the front pump, suction screen or suction pipe to servo body seal are working fine or the car wouldn't move in Drive range.

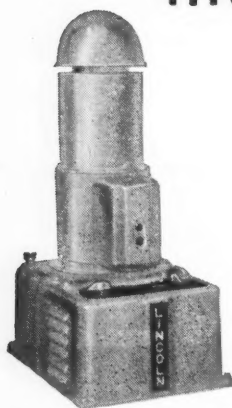
When shooting trouble, select from the list of causes those which apply to the individual range.

Make sure the transmission is filled with oil before performing any test. This one little step may save time and money, because low oil level will cause slippage in all ranges.

All causes indicated by an asterisk mean that the jobs can be done with the transmission in place.



LINCWELDER MAKES SHORT WORK OF REPAIRS ...to boost your profits



LINCWELDER DC-250-MK—With Lincoln's famous Dual Continuous Control. Efficiently designed with heavy industrial construction... yet sells for less than other welders of similar type and capacity.

Ask any garage repairman who uses the "Lincwelder DC-250-MK" for welding frames, axles, bumpers, or doing light body work. He'll tell you it takes fewer manhours to finish any weld with "Lincwelder". As a result, your costs are less... your profits are higher on every welding job.

Here's why:

1. **Versatile**—"Lincwelder" welds all metals... steel, cast iron, bronze, stainless, aluminum.
2. **Makes Welding Simple**—"Lincwelder's" Dual Continuous Control sets *right arc* and *right arc intensity* for every job. Insures strong, top-quality welds produced faster in any position... flat, vertical or overhead to cut your costs.
3. **Wide Range**—40 to 250 amps. Handles thin body metals or heavy frames and axles.

ORDER NOW! Lincoln distributors and offices are in every principal city. Ask for Bulletin 1332 giving details or write

THE LINCOLN ELECTRIC COMPANY

DEPT. 4008
CLEVELAND 17, OHIO



LOOK TO LINCOLN FOR LEADERSHIP

The World's Largest Manufacturer of Arc Welding Equipment

When Car Will Not Move In Reverse Range

This means that sufficient oil pressure is not reaching the clutch. Some of these reasons are:

- Defective front oil pump.
- *Suction pipe screen clogged
- *Suction pipe seal or gasket not forming a perfect seal
- *Incorrectly adjusted linkage
- A bad reactor shaft flange gasket
- A brittle, cracked or hardened clutch piston outer seal
- Badly worn clutch piston inner seal ring
- Worn oil seal rings on reactor shaft at its rear end
- *High accumulator gasket leaking internally.

When Car Will Not Move In Drive Range

- Some low range failures are:
- *Low servo not working
 - *Low accumulator gasket leaking internally
 - A bad reactor shaft flange gasket

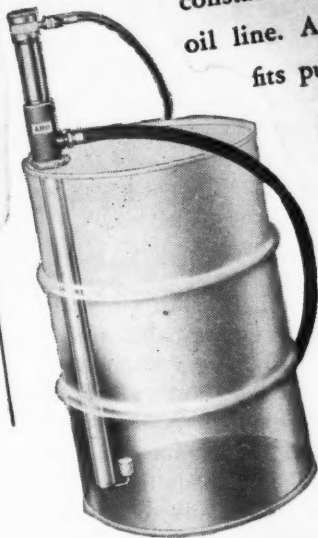
(Continued on page 166)

ARO PUMPS for Volume Delivery!

AIR-OPERATED MOTOR OIL Supply Pump

**FOR OVERHEAD REELS
OR OIL BARS!**

Model 60061... Gives fast volume delivery of oil from drum to dispensing outlets such as overhead reels or oil bars... Simple design, low cost, easy to handle in drum changing. Float-type air-eliminator gives constant full-fluid charge in oil line. Adjustable adapter fits pump to any bung-type drum with 2" P. T. opening, 100 lb. to 400 lb. capacity.



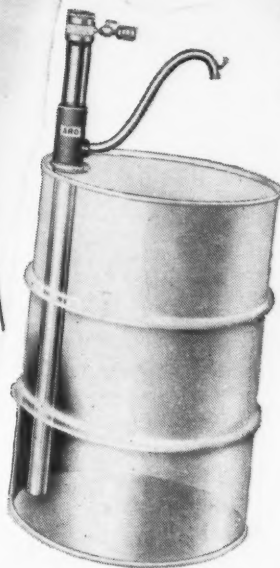
AIR-OPERATED Hi-Volume TRANSFER Pump

**DELIVERS UP TO 20
GALLONS PER MINUTE!**

Model 60060... for motor oil, light-bodied grease, anti-freeze, paint, other fluids. Provides fast, easy, thrifty way to transfer fluids from bung-type drums to

working containers or reservoirs. Low-cost, light-weight, durable

... fits all bung-type drums, 100 to 400 lb. capacity... handles all light-bodied fluids.



ARO BUILT DEPENDABILITY!

SEND . . .

ARO

**LUBE
EQUIPMENT**

Also . . . AIR TOOLS . . . AIRCRAFT
PRODUCTS . . . GREASE FITTINGS

The Aro Equipment Corp., Bryan, Ohio

Without obligation, send bulletin giving complete details on the new Aro Motor Oil Supply Pump and Hi-Volume Transfer Pump.

Name.....

Company.....

Street.....City.....State.....

Calendar of Coming Events

Dealer Meetings

Oct. 13-16—Federation of Automobile Dealers Assn. of Canada, Royal York Hotel, Toronto, Ontario

Oct. 17-19 — Arizona Automobile Dealers Assn., Hotel Westward Ho, Phoenix, Ariz.

Oct. 18-20—Tennessee Automotive Assn., Buena Vista Hotel, Biloxi, Miss.

Oct. 22 — Connecticut Automotive Trades Assn., Inc., Hotel Bond, Hartford, Conn.

Oct. 25-27 — Automobile Dealers Assn. of Alabama, Buena Vista Hotel, Biloxi, Miss.

Oct. 25-27 — Florida Automobile Dealers Assn., Sheraton-Beach Hotel, Daytona Beach

Nov. 9-11—Automotive Trade Assn. of Virginia, John Marshall Hotel, Richmond

Nov. 9-11—Ohio Automobile Deal-

ers Assn., Hotel Commodore Perry, Toledo

Nov. 13-14 — Montana Automobile Dealers Assn. Convention, Finley Hotel, Butte, Montana

Nov. 18-19—Oklahoma Automobile Dealers Assn., Mayo Hotel, Tulsa

Nov. 30-Dec. 2—Idaho Automobile Dealers Assn., Boise Hotel, Boise

Dec. 3 — Utah Automobile Dealers Assn., Newhouse Hotel, Salt Lake City

Dec. 4—Oregon Automobile Dealers Assn. Convention, Multnomah Hotel, Portland

Automobile Shows

Oct. 10-25—Southwestern Automobile Show, Dallas, Texas

Jan. 9-13, 1954—NADA Convention, Miami Beach, Fla.

Jan. 9-13, 1954—7th Annual NADA Shop Equipment Exposition, Portico Annex, Municipal Auditorium, Miami Beach, Fla.

Jan. 9-13, 1954 — NADA Truck Equipment Exposition, Miami Beach, Fla.

Jan. 30-Feb. 7, 1954—Greater St. Louis Automotive Assn., Inc., Exposition Hall, Kiel Auditorium, St. Louis, Mo.

Feb. 8-11, 1954—Automotive Assn. Accessories Manufacturers of America Exposition, Navy Pier, Chicago, Ill.

Feb. 20-28, 1954—Second Annual World Motor Sports Show, Madison Square Garden, New York City

Mar. 13-21, 1954 — Chicago Auto Show, International Amphitheater

Apr. 17-25, 1954 — Seattle Auto Show, Seattle Civic Auditorium

Withstands toughest jolts!

Herbrand's

Power Socket Set

NO. PSB-6

Introducing Herbrand's line of power and impact sockets for use on clutch assemblies, cylinder heads, oil pans, wheels, etc. They easily absorb the jars and jolts of power operation without cracking or chipping.

Herbrand power sockets are hot forged of triple alloy steel and have a special reinforced design with extra heavy sidewalls. Locking feature is slip-proof. When used with any power or impact wrench, they save time . . . boost profits. Available in all the popular sizes in 1/2" drive, 3/8" drive, both standard and deep.



PS-614 . . 7/16" PS-620 . . 5/8"
PS-616 . . 1/2" PS-622 . 11/16"
PS-618 . . 9/16" PS-624 . . 3/4"
Mechanic's Net . . \$4.20

The No. PSB-6 Set is Herbrand's Tool-of-the-Month selection for October. See it at your Herbrand distributor or write us.



The Tool Line With Turnover
—Not Leftovers!



Herbrand Tools

Fremont 7, Ohio

THE BINGHAM-HERBRAND CORPORATION



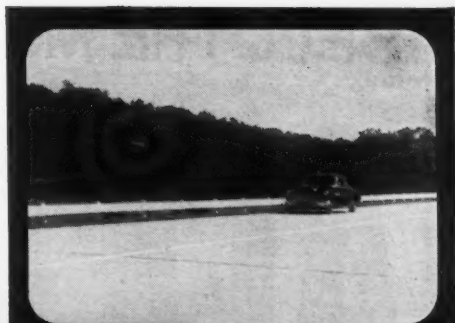
Plymouth to Build Bodies At Evansville, Ind., Plant

Bodies for Plymouth club coupes and 3-passenger coupes will be assembled in the Chrysler Corp. Evansville, Ind., plant in an area to be released next month by completion of the plant's current defense assignment.

The new operation will encompass complete body building, from framing and assembly of body stampings shipped from Detroit to the entire paint and trim cycle. It will have a capacity to supply all of the plant's anticipated needs for this body type. George H. Rumford, plant manager, reported that work is already underway in clearing the plant of defense equipment and installing facilities for the new civilian job.

Since early 1951, the plant has been used for the assembly of hulls for the Grumman Albatross air-sea rescue plane, while production of Plymouth passenger cars continued in the remainder of the plant.

You're Safer with *Saginaw* ...even with a ***BLOWOUT***



HERE COMES A CAR DOING 30 MILES AN HOUR



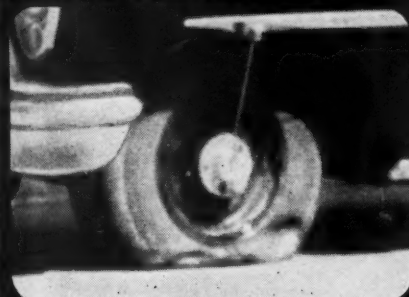
EQUIPPED WITH SAGINAW POWER STEERING AND



TWO DYNAMITE CAPS IN THE LEFT FRONT TIRE!



BANG! THERE'S A MIGHTY DANGEROUS BLOWOUT



BUT NO VIOLENT PULL ON THE STEERING WHEEL



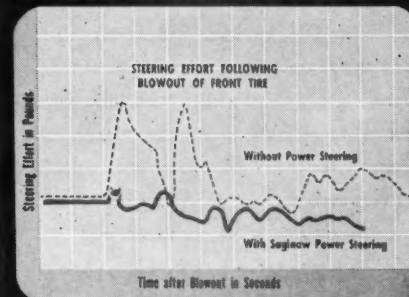
THE DRIVER CAN HARDLY FEEL IT. NOTE HOW CAR



PARALLELS THE RAIL. DOESN'T LURCH A BIT!



CHART SHOWS HOW EASILY YOU KEEP CONTROL AS



SAGINAW POWER STEERING RESISTS THE TWISTS!



This sequence of unretouched photographs was taken from a motion picture of test runs at the General Motors Proving Ground. They clearly prove that if you have a blowout like this—hit a chuckhole or soft shoulder—you're safer by far with *Saginaw Power Steering* on your car. It's now available on all General Motors cars and three other well-known makes. Be sure to ask for a demonstration. *Once you try it, you'll never want to be without it!*



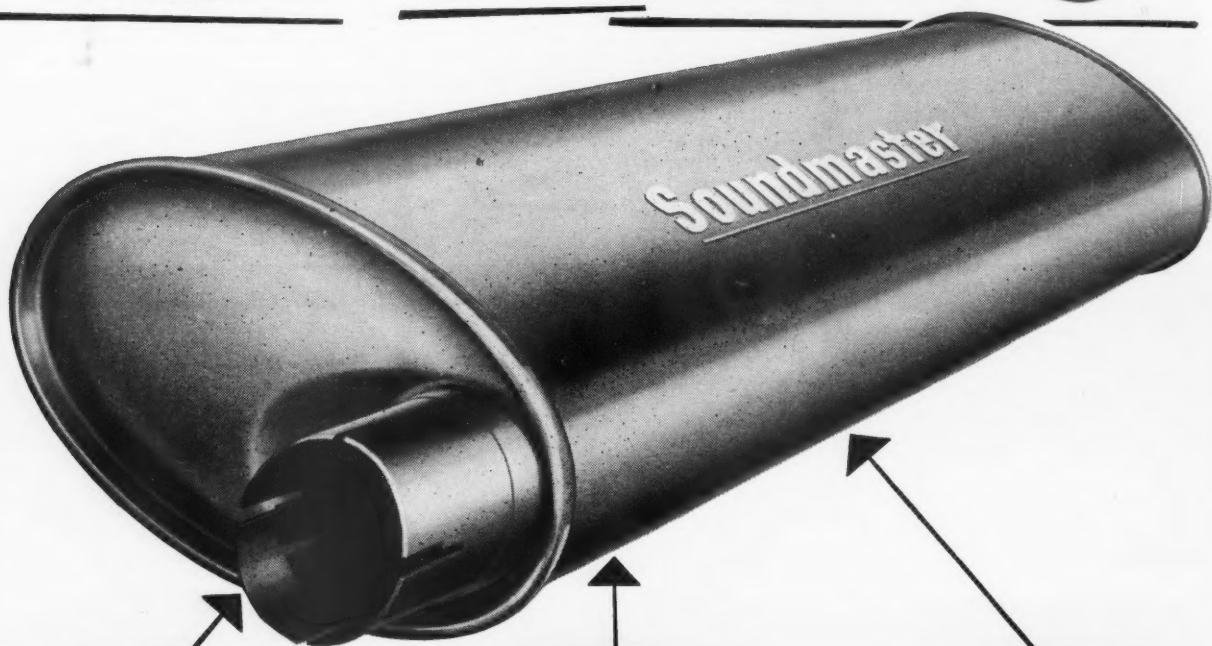
Saginaw

POWER STEERING

SAGINAW STEERING GEAR DIVISION GENERAL MOTORS CORPORATION, SAGINAW, MICHIGAN

SELL THE MUFFLER THAT FITS THE CAR

ALL 3 WAYS



1 MECHANICAL FIT
for fast, easy
installations

No compromise in size or shape . . . each Soundmaster Muffler is engineered for a specific make and model. That's why Soundmaster FIT means Fast Installation Time—more profit for you on every job!

2 ACOUSTICAL FIT
for full-range
noise control

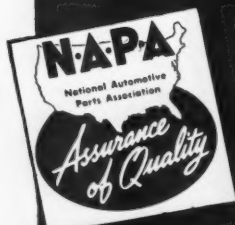
No "in-and-out" noise control here! Soundmaster eliminates objectionable noise on each car over the entire range of speeds and loads. Soundmaster engineers really *know noise*—and how to control it!

3 HORSEPOWER FIT
for all the power
the car can deliver

The sacrifice of acceptable back pressure limits is one way to whip noise problems — BUT! Our engineers know better ways. You'll never catch a Soundmaster stealing power by stretching the back pressure limits!

Now, and from now on, install Soundmaster—the muffler that fits *all three ways*. Quickly available from NAPA Jobbers . . . correctly engineered for each make and model!

DE KOVEN MANUFACTURING COMPANY • RACINE, WISCONSIN



Soundmaster

MUFFLERS, PIPES AND ACCESSORIES



REAL DEAL! The Hollingshead Profit Pyramid!

You take your pick in this deal—you can have this wonderful cutlery set for only \$1.00, or you can pyramid your profits as high as 59%! You'll welcome other features of the deal, too, including:

1. Small investment needed to participate—as little as \$17.20!
2. Flexible choice of products—you select products that sell best for you.
3. Nine leading WHIZ products included—
MOTOR RYTHM (pts.) • KLEEN-FLUSH • ZORBIT
INSTANT SEALER • KLEAR-FLO • FORMULA III
VENUS POLISH • METAL SEAL • LUSTERIZE AUTO
BEAUTY KIT

Ask your jobber salesman for more news about the new Hollingshead deal on WHIZ products now in effect. Take your premium or your profits—do it now!

Bonus Deal 53-K. You select any 3-case combination of listed WHIZ products. Make your regular profit margin and get the stainless steel cutlery set for only \$1.00 extra!

Extra Profits Deal 53-R. Choose any 3-case combination of listed products and get a 1-dozen case of RUSTOP (radiator rust inhibitor and waterpump lube)—for only \$1.00 extra. Retail value \$12.00!

Super Profits Deal 53-S. Add 2 more cases to either 3-case deal above, and get at no extra cost a 1-dozen case of RUSTOP, retail value \$12.00!



R. M. Hollingshead CORPORATION

LEADER IN MAINTENANCE CHEMICALS

840 Cooper St., Camden 2, N. J. • Canadian Offices: Toronto
Warehouses: Atlanta, Chicago, Dallas, San Francisco

R. O. BENNETT, Lubbock, Texas
Lincoln-Mercury Dealer, says:

*"... One of the best
tips I ever received"*

"WHEN I started the Bennett Motor Co. in 1941, COMMERCIAL CREDIT was recommended to me by another dealer. That recommendation was one of the best tips I ever received. We have always felt . . . and found . . . that we could depend on COMMERCIAL CREDIT to handle any financing that might come up. Their reasonable rates, fairness and consideration help us get repeat business. Their methods save us from repossessions. Their automatic insurance coverage helps make sales on the spot . . . saving lost sales to prospects who might 'cool off' if allowed to go elsewhere for financing. COMMERCIAL CREDIT is always there to help."

**COMMERCIAL CREDIT DEALERS
ARE *Successful* DEALERS**

Find out how COMMERCIAL CREDIT "know how," resources and personnel can help you increase sales and profits, too. Just write or wire your nearest COMMERCIAL CREDIT office. Ask to see "The Salesman's Angle" when you do.



**COMMERCIAL
CREDIT
CORPORATION**

A service offered through subsidiaries of Commercial Credit Company, Baltimore . . . Capital and Surplus over \$135,000,000 . . . offices in principal cities of the United States and Canada.



The best cement for
those "sticky" jobs!



RED-I-TRIM Trim Cement

When you use RED-I-TRIM Cement by CARBORUNDUM on any surface, it really sticks. This heavy, clear cement adheres strongly to fabric, wood, metal, in fact, on any job encountered in the trim shop.

Because it does not stain or bleed through fabric, RED-I-TRIM Cement does a cleaner, more professional job on upholstery repairs.

Because it is weather-proof and heat resistant, it does a remarkable job of repairing surface tears in convertible tops. You will find dozens of extra uses for it, too, right in your own shop.

RED-I-TRIM Cement dries fast on any surface, but retains its adhesive tack for several hours.

THREE CONVENIENT SIZES—5-oz. tubes, pint cans and quart cans. Display a dozen 5-oz. tubes on your counter...make extra profits on sales to your customers. You get an eye-catching display box with each dozen tubes.

CALL YOUR CARBORUNDUM JOBBER...

or write to The Carborundum Company, Dept. MA 90-321,
Niagara Falls, New York.



Stock the complete Red-I-Brand line by

CARBORUNDUM

REGISTERED TRADE MARK

...for high-profit work with low-inventory investment

All brand names in the Red-I-Brand line are trade marks of The Carborundum Company, Niagara Falls, New York

Protect Yourself!

BUY 'EM BRANDED!



YOUR GRIZZLY DISTRIBUTOR NOW BRANDS EXCHANGE SHOE LININGS BY MAKE AND GRADE*

Now, when you buy exchange brake shoes, you can be absolutely sure that they are lined the way you want them! For now your Grizzly Distributor clearly brands each Grizzly-lined exchange shoe not only with the name "Grizzly," but with the exact *grade* of Grizzly lining as well!

This complete and honest branding of the product is only one of many ways your Grizzly Distributor serves you. He offers you fast, reliable exchange service, and whether you want bonded or riveted lining, he brings you the *finest* obtainable—Grizzly SAFTIBOND-SYNCRE or SAFTI-BOND-SILVERTIP for *bonding* . . . and Grizzly SYNCRO or SILVERTIP drilled and countersunk sets for *riveting*.

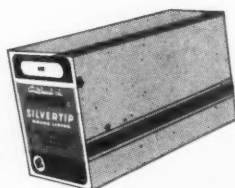
Protect yourself—buy 'em branded from your Grizzly Distributor!
Grizzly Manufacturing Company, Paulding, Ohio.



... Ask for

GRIZZLY BRAKE LINING

NATIONALLY ADVERTISED!...
Grizzly products are advertised in The Saturday Evening Post and Collier's . . . and solidly backed by Grizzly's complete merchandising program.



**Grizzly Drilled and
Countersunk Sets**

Silvertip for deluxe or severe service . . . Syncro Sets for standard duty. Individually boxed.

Most Grizzly Distributors pack branded relined shoe sets in cartons, labeled with FMS Set No. and lining type.

YOU AND A McCASKEY CASH REGISTER SYSTEM

Will Really Control Your Transactions in Cars, Parts and Repairs



Practical Registering Capacity

You can register car sales to within 1¢ of \$10,000 in one McCaskey register ring-up...

Certified Records

You can have certified sales slip, work order and paid-out records of daily transactions—identical with your register printed detail strip records and positive proof of correct amounts received, paid and recorded.

Item-Added for Accuracy

You can have an item-added breakdown of transactions including more than one item—listed and totalled individual amounts for parts, time and other items sold, from sales slips and work orders.

This certified work order protects you!

PTS A	2 25	—
PTS	1 27	5
ACS	7 95	—
OIL	2 40	—
	25 35	ST
TAX	46	—
LAB	1 37	5
	39 56	T
M-C D	27 95	00
TAX	55 90	—
	28 50	90
	28 50	90

TOTAL LABOR	13	75
TOTAL PARTS	15	00
ACCESSORIES	2	75
6 GAS, OIL, GREASE	2	40
MISC. MERCHANDISE		
SUBLET REPAIRS		
TAX		46
PAY THIS AMOUNT	39	56

1956T

Your typical McCaskey Detail Strip Control Record.

YOU OBTAIN IN THE McCASKEY CASH REGISTER SYSTEM A SIMPLIFIED METHOD THAT HAS ACTUALLY "GROWN UP" WITH GARAGE AND AUTOMOTIVE EXPERIENCE DURING THE LAST 50 YEARS!

McCaskey Cash Register Systems • Charge Account Control Systems • Sales Books and Continuous Forms • Fire Protection for Vital Records • ALL offer you the benefits of simplicity, completeness of usable records and protection against losses.

McCaskey Register Company, Alliance, Ohio

SEND INFORMATION ON THE PRODUCTS CHECKED:

- ☐ McCaskey Cash Register System
☐ McCaskey Charge Account Control System

- ☐ McCaskey Steel Safe
☐ McCaskey Sales Books and Forms

NAME..... ADDRESS.....
 CITY..... STATE.....

THE McCASKEY REGISTER COMPANY • ALLIANCE, OHIO

Boston • New York • Philadelphia • Washington, D. C. • Atlanta • Pittsburgh • Kansas City • Cleveland • Chicago
 Detroit • Minneapolis • Dallas • San Francisco • In Canada, Galt; In England, Watford



FRAM FEEDS YOU PROSPECTS

Attention-getting
advertisements for
Fram Filters in
MECHANIX ILLUSTRATED
and other leading national
magazines are regularly seen by
millions of car owners.



FRAM FILTERS ARE ADVERTISED

regularly in **MECHANIX ILLUSTRATED** because —

The Fram Corporation recognizes the importance of reaching MI's more than a million motor minded men. Surveys show that information about cars is of Number One importance to MI's readers. **MECHANIX ILLUSTRATED** editors are aware of this interest... they cater to it by devoting many editorial pages every month to cars and car upkeep—headlined by Tom McCahill's "New Car Tests" and Fred Russell's "Car Care" features.

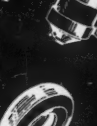
Because these men have confidence in **MECHANIX ILLUSTRATED**'s editorial content, they also believe in its advertising pages and look for products about which they read at their local dealers. They represent a tangible pre-sold market for all things automotive. That's why Fram Filters are advertised in MI... and that's why it's important for you to let the many MI readers in your area know you are a Fram dealer.

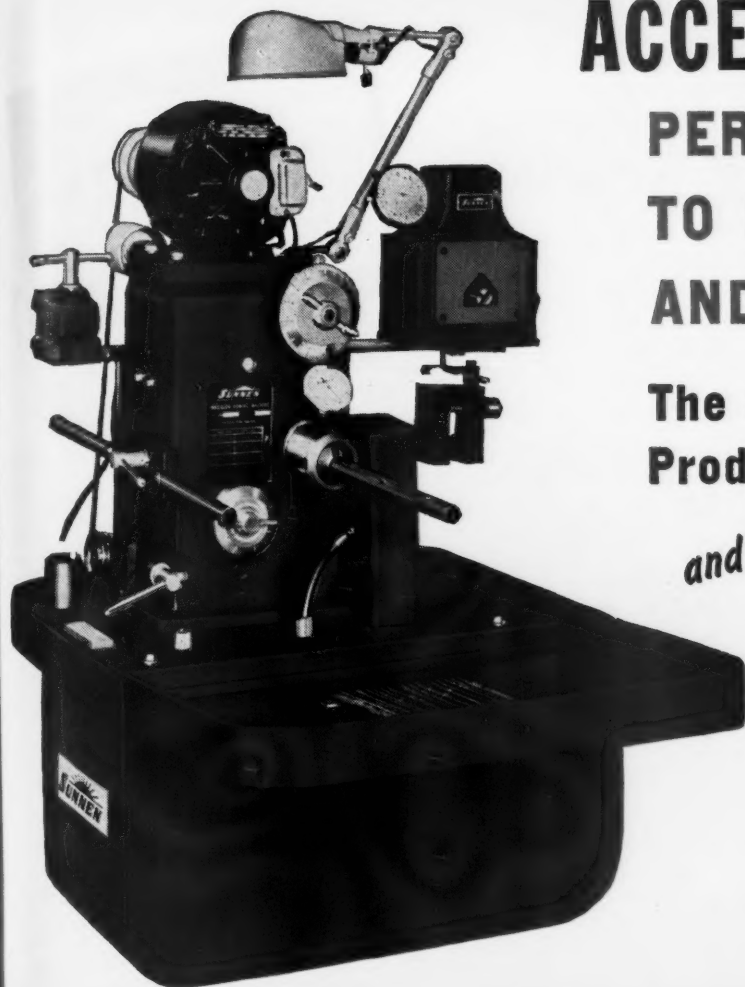
MECHANIX ILLUSTRATED

The favorite magazine of motor-minded men

A FAWCETT PUBLICATION

67 WEST 44th STREET • NEW YORK 36, N. Y.



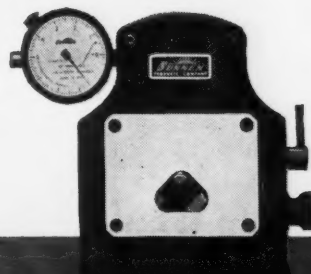


**ACCEPTED... as the
PERFECT COMBINATION
TO BRING PRESTIGE
AND PROFITS!**

**The Sunnen Honing Machine
Produces Perfect Pin Holes**

and the

**New *SUNNEN*® Gage
SHOWS You
the Fit is Right!**



756

Like the Kreplin Company of California, leading jobber shops, engine rebuilding shops, and garages have seen the new Sunnen Pin Fitting Combination *in action*—and they're ordering it so their own customers can have the best pin fits possible.

And no wonder! It's the only method that can take out "another tenth" for the exact pin clearance specified by the manufacturer. And it's the only gage that lets you *measure the hole* to make sure you have the right clearance—to a tenth just by *reading a dial*. No previous experience is necessary.

With Sunnen pin fitting you can avoid costly "comeback" jobs—and you'll build prestige, profits and satisfied customers who *will* come back.

**THE BEST TEST IS A
FREE DEMONSTRATION
RIGHT IN YOUR SHOP...
ASK FOR IT!
CALL YOUR SUNNEN
JOBBER TODAY!**

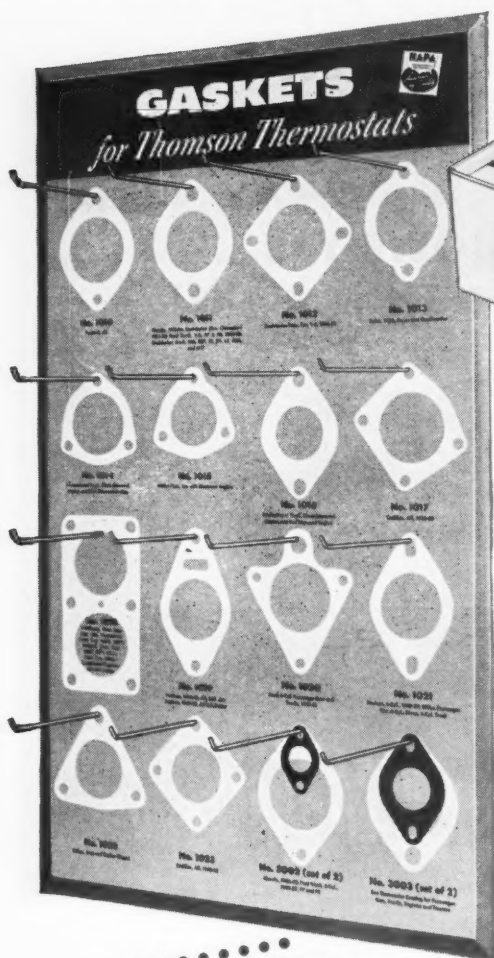
***SUNNEN*® PRODUCTS COMPANY**

7918 MANCHESTER AVENUE • ST. LOUIS 17, MISSOURI

CANADIAN FACTORY: CHATHAM, ONTARIO



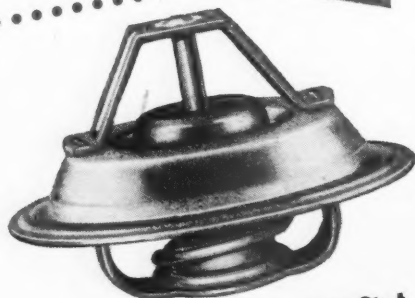
Be ready for Frost...



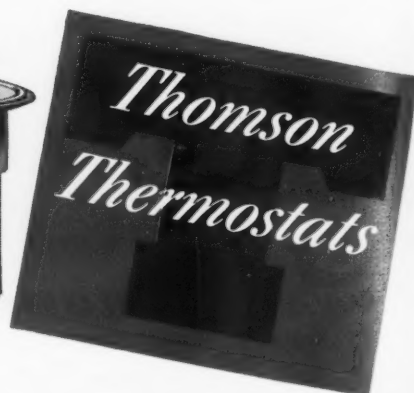
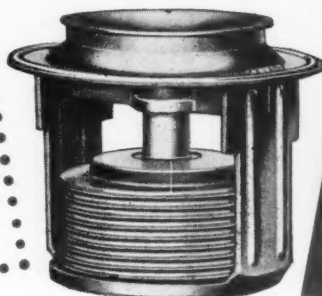
with these new profit-making display assortments

● You're on your way to the most profitable thermostat business you've ever had with these handsome display assortments of Thomson Thermostats, and Gaskets, too! Balanced stocks of fast-moving numbers—covering 90% of all cars which may need thermostat replacement this year. Thomson Electro-Fused Thermostats—used as original equipment by major car manufacturers—meet every operating condition and temperature requirement with tight-closing, trouble-free, poppet valves! Call your NAPA Jobber, NOW!

STANDARD-THOMSON CORPORATION • DAYTON 2, OHIO



The New Thomson H-P Stat
For the first time brings to vehicles with highly-pressurized cooling systems, the advantages afforded by the efficient and reliable poppet-valve.





Announcing...

The Elegant New '54 Dodge



DODGE ROYAL V-8 FOUR DOOR SEDAN

Specifications, equipment and prices subject to change without notice

The Dodge with More than Ever Before!

More to it—More in it—More of it!

Championed by the luxurious new Royal V-8 series, and the new stepped-up Red Ram 150 V-8, Dodge provides a whole host of new advantages destined to crown its remarkable 1953 record of economy and performance *firsts* with exciting new lustre.

New Full-Time Power Steering . . . new fully automatic PowerFlite Drive . . . new Color-Harmony interiors highlighted by lustrous Jacquard fabrics

. . . and new stunning over-all styling add up to more built-in value—more car for the money!

Yes, in every way the '54 Dodge is truly the Dodge with more than ever before. There's more to it . . . more in it . . . more of it!

Here's the all-around car for all America—the profit-building, sales-winning beauty designed specifically for every prospect's purse and purpose!

**Only Dodge Offers 3-Way Dealer Profits
—from a single sales agreement**

Dodge and Plymouth cars and Dodge "Job-Rated" trucks (sold only by Dodge Dealers) form a triple-profit opportunity enjoyed by Dodge Dealers *alone*—from a single sales agreement! A limited number of Dodge Triple-Profit Opportunities are now open. Why not inquire about them?

**WRITE TODAY
FOR COMPLETE DETAILS**

DODGE DIVISION, CHRYSLER CORPORATION, DETROIT 31, MICHIGAN

DEPENDABLE

New '54
DODGE

The Action Car for Active Americans

When you see headlamps like these—



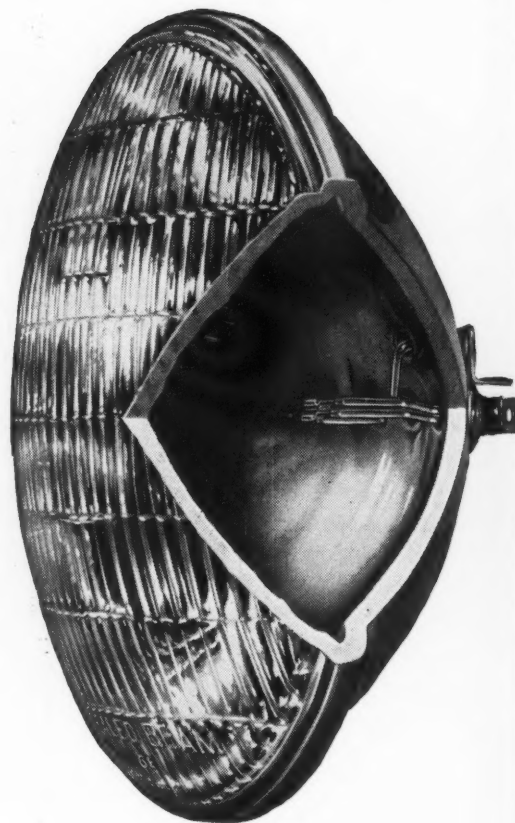
**it's a sure sign
you can sell
one of these →**

YOU'VE SEEN PLENTY of headlamps like the ones above—water or drops of moisture inside the lens, blackening on the inner bulb, rust and tarnish on the inside reflector, cracks in the glass. Watch for them. They rob light vital to safe night-time driving.

MAKE A HABIT of checking headlamps when cars pull in for service. You can do it easily, quickly. And when you spot troubles like those above, let the customer know he may be "*headed for headlamp trouble*". This phrase gives you a perfect lead-in to sell a G-E "All-Glass" Headlamp. (Chances are most customers will want to buy two new lamps.)

TELL YOUR CUSTOMER HOW G-E Headlamps' one-piece construction keeps out dirt and moisture, eliminates tarnish, rust. (See cutaway, right.) Show him that the General Electric Headlamp has no inner bulb to blacken. The headlamp is *one big bulb*. Tests show they average 99% as much light after years of service as when new.

BE SURE you have plenty of General Electric Headlamps on hand. Order some today!



G-E All-Glass headlamps DO NOT GROW DIM

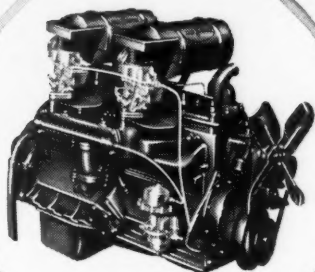
You can put your confidence in—

GENERAL  **ELECTRIC**

Introducing Instant Action Engines

with Super Induction in Beautiful

ALL-NEW HUDSONS FOR '54



1954



New 1954 Hudson Hornet

NEVER BEFORE A CAR WITH ALL THIS:

- New Flight-Line Styling
- New Salon Lounge Interiors
- New Power, Performance and Economy
- New Perfected Power Steering†
- New Improved Power Brakes†
- Exclusive Twin H-Power†
- Exclusive "Step-Down" Design
- Exclusive Monobilt Body-and-Frame[†]
- Exclusive Triple-Safe Brakes*
- New Dual-Range Hydra-Matic Drive†

†Optional at extra cost on various models.

*Available on various models at no extra cost.

Quickest Power Response You've Ever Seen!

Beautiful, all-new Hudsons for 1954 set a breath-taking new standard with new power and performance . . . power that responds instantly, in *any* driving range, from Instant Action Engines with Super Induction! And Hudson dealers sell not only the hottest performer in every price field—but also the most beautiful!

IF THE great array of big, new Hudson features shown to the left looks good to you, maybe you'd better get in touch with us. There are still a few good Hudson franchises open in some territories. For complete information, write, wire or phone: C. A. J. Hadley, Sales Manager, Hudson Motor Car Company, Detroit 15, Michigan.

HUDSON HORNET • WASP • JET

Standard trim and other specifications and accessories subject to change without notice.

"Genuine LIPE Clutch Parts cost less than imitations?"



That's right! Know what could happen if you installed a cheap inferior part in a Lipe clutch?

"You're gonna tell me the clutch won't work. I know better."

Oh, the clutch will work all right . . . but for how long? Let's say you've installed a pressure spring of inferior quality. One that hasn't been tested like a Lipe spring for compression weight and functional dimensions. One that isn't made of chrome silicon steel and so designed that it can't be overstressed. In a little while the spring made of poor material becomes highly overstressed and has a high fade rate. It loses its torque capacity. In no time at all you have slippage and costly damage to the pressure plate, driven disc and engine fly-wheel. Result—a crippled truck.

"So the owner comes back for another repair job."

You think he's going to come back to you?
Uh-uh.

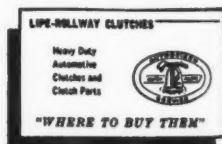
"I get it. I put in a cheap part and run the risk of ruining a clutch and losing a customer. So that's why a genuine Lipe part actually costs me and the trucker less."

Right. The truck owner pays more for a Lipe part—but he saves on future repairs and downtime. In return, you make a higher profit, eliminate complaints and build customer confidence.

"Where can I get Genuine Lipe Clutch Parts?"

If in a larger city, look for this ad in the yellow pages of your telephone directory under

"Clutches." Write to the factory for complete data, free service manuals and wall chart, and name of your nearest authorized jobber.



Lipe - ROLLWAY CORPORATION

Manufacturers of Automotive Clutches and Machine Tools
Syracuse 1, N. Y.

ever-growing



public acceptance



proves



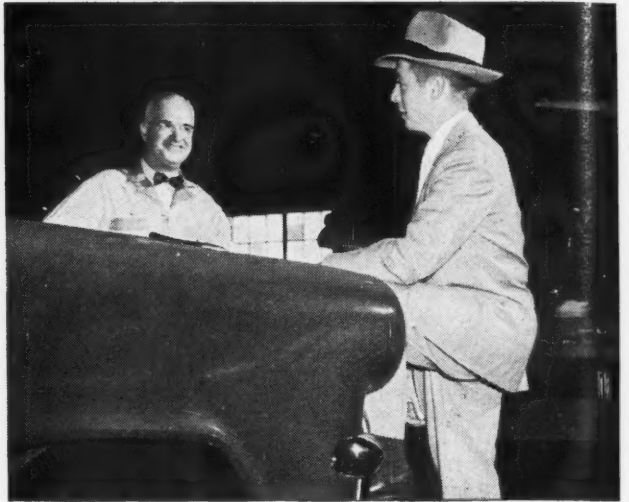
*it pays
to travel with*

MERCURY

How the Country-Side Unit sells cars and service for you



THE BIGGEST AUTOMOTIVE MARKET in America is the Country-Side Market—the 19,000,000 families who live in towns under 10,000 population, in crossroads villages, down country lanes, and on farms.



COUNTRY-SIDE FAMILIES own more than half the nation's cars. They also account for most of the nation's service business. In fact, they support the majority of the car dealers and independent repair shops in America.



4,200,000 OF THE BEST FAMILIES in Country-Side America are sold by the Country-Side Unit—a combination of Farm Journal and Town Journal magazines. Farm Journal is America's largest selling farm magazine. Town Journal is the only dual appeal publication aimed at Main Street people.



AUTOMOTIVE MANUFACTURERS AND DEALERS get what they want from advertising in the Country-Side Unit. Manufacturers get more customers in the *whole* Country-Side Market, both town and farm. Dealers get local impact—coverage among their best customers and prospects like a local newspaper.



+



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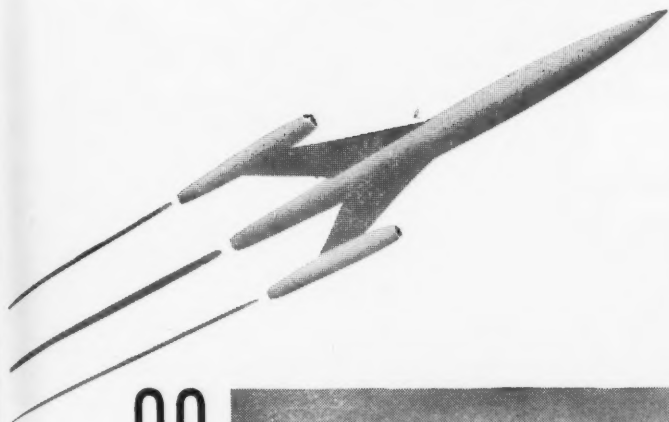
THE COUNTRY-SIDE UNIT...

4,200,000 of the best customers
in America's biggest automotive market

**SELLS THE WHOLE
COUNTRY-SIDE MARKET**

Everybody's going

Over to Olds!



THE BIG PARADE
TO OLDSMOBILE
MEANS BIG PROFITS
FOR DEALERS!

Once people see how *much* they get for what they pay . . . *over to Olds they go!* For a price just slightly higher than "budget-make" cars, Oldsmobile offers many big advantages. The swift, smooth power of the famous "Rocket" Engine! The long, graceful sweep of Power Styling! The deep-down comfort of Custom-Lounge interiors—and even more! No wonder this is the greatest "Rocket" year yet—with more and more people every day making the move over to Olds! And that's why *now*, more than ever before . . . it's SMART to BE with Olds!

"ROCKET" ENGINE

OLDSMOBILE

OLDSMOBILE DIVISION • GENERAL MOTORS CORPORATION • LANSING, MICHIGAN

Chilton's MOTOR AGE, OCTOBER, 1953

\$2000 monthly from Dyn-A-Lyzer Service

DOMETER

PELTONS

SAFETY

SERVICE

WHAT
Harold J. Pavea
Director of Service
REPORTS

Dynamic
4 WHEEL ALIGNMENT

GUARANTEED
PERFECT
ALIGNMENT
4000 MILE
Guarantee



PELTON MOTORS, Inc.

1345 S. FIGUEROA ST. LOS ANGELES 15, CALIFORNIA
September 11, 1953

Mr. J. H. Pereus
Manbee Equipment Division
185 W. Wabash Ave.
Chicago 1, Ill.

Dear Mr. Pereus:

It is a pleasure to report in writing our experience with the Manbee Dyn-A-Lyzer for the benefit of car dealers who might be interested.

Our average monthly income from the Dyn-A-Lyzer, exclusive of new car service, is over \$2000.00--40% of which goes to the operator.

Dyn-A-Lyzer Service has greatly increased the satisfaction of our customers. Many have said they never knew what a big difference perfect steering means until after their cars were Dyn-A-Lyzed. With today's critical need for proper wheel alignment, this would make the Dyn-A-Lyzer an excellent investment for us, even though the service were not so profitable.

We have successfully corrected wheel alignment faults on cars that have had wheel alignment service in several different shops without success. Consequently, the fame of our Dyn-A-Lyzer is spreading and we are attracting new wheel alignment customers from a wide area.

Although our Dyn-A-Lyzer operator, Johnny Surmeir, has unusual ability, he had little wheel alignment experience before he received instructions from Cooper Lipsfield. From the start he has operated the Dyn-A-Lyzer with speed and accuracy that is simply astounding. He now says he has the best job in Los Angeles.

We extend a cordial invitation to any Dealer who would like to see a demonstration of the Dyn-A-Lyzer for it is in use constantly.

Yours very truly,
PELTON MOTORS, INC.

Harold J. Pavea
Harold J. Pavea
Director of Service

HJP/che

PELTON'S CARE IS BEST FOR YOUR CAR

Increased Profit and increased Customer Satisfaction reported by PELTON MOTORS is typical of Dyn-A-Lyzer users everywhere. Buick, Cadillac, Chevrolet, Chrysler, Dodge, Ford, Lincoln-Mercury, Oldsmobile and Plymouth Dealers, as well as Wheel Alignment and Independent Service Shops the country over, all report similar success.

Dynamic 4-wheel alignment makes the BIG difference

When you revolve the wheels and *check alignment under true road conditions*, you eliminate the common causes of inaccurate wheel alignment.

When you set toe and center the steering wheel with hairline precision *in true relation to the rear wheels* you have the answer to perfect steering.

Only the Dyn-A-Lyzer gives you these two basic essentials. No wonder users report "no comebacks", *Customer Satisfaction beyond belief*, and increased profits that pay for the Dyn-A-Lyzer several times each year.

The experience of users indicates *you will keep paying for a Dyn-A-Lyzer several times each year* in lost profit until you get one. Therefore, you are entitled to know all about this new *dynamic 4-wheel alignment machine* that makes conventional wheel alignment service obsolete.

Descriptive literature mailed promptly on request.

MANBEE EQUIPMENT DIVISION

185A9 N. Wabash Ave., Chicago 1, Ill.



- Wheel Aligners
- Wheel Balancers
- Axle Straighteners
- Headlight Testers

LIGHT and HEAVY DUTY for EVERY SIZE OF SHOP

Only the Dyn-A-Lyzer gives you all these

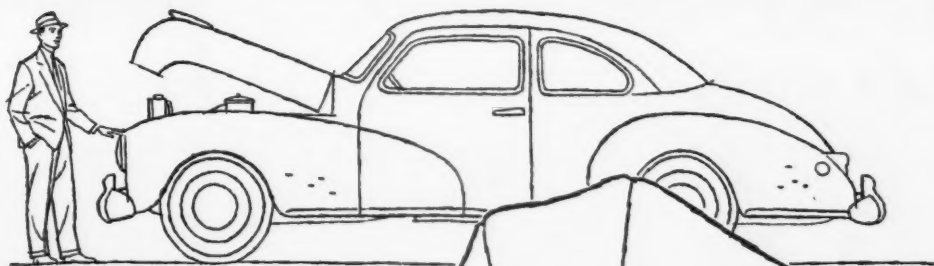
The flick of a switch revolves the wheels under load for alignment checks under true road conditions.

Toe setting and steering wheel centering with hairline precision in true alignment with rear wheels.

Road tests in slow motion right in your shop.

Precision centering of the steering wheel without positioning car "square" on the runway.

Simple instruments that are easy to check.



How would you
like a customer
like this?



"For several years, I've used WOLF'S HEAD
exclusively. I have 70,000 miles on my car
and still use less than one quart per thousand."

Brand loyalty is strong among users of WOLF'S HEAD Motor Oil. Once you sell a customer, you never have to re-sell him. And you can bet he'll steer plenty of friends to you through the years.

FREE! "Guide to the Weather" Folder tells how to forecast weather by cloud formations. Write for a copy.



WOLF'S HEAD OIL REFINING CO., INC.
Oil City, Pa. • New York 10, N. Y.

WOLF'S HEAD Motor Oil is 100% Pure Pennsylvania, Specially Refined and Scientifically Fortified. It meets the requirements of all makes of cars and all types of service. *It cleans as it lubricates . . .* provides richer, tougher, longer-lasting protection against power-robbing sludge, rusting and corrosive acids.

Sell your customers superior engine performance and economy with WOLF'S HEAD!

WOLF'S HEAD

MOTOR OIL AND LUBES

100% Pure Pennsylvania
Scientifically Fortified

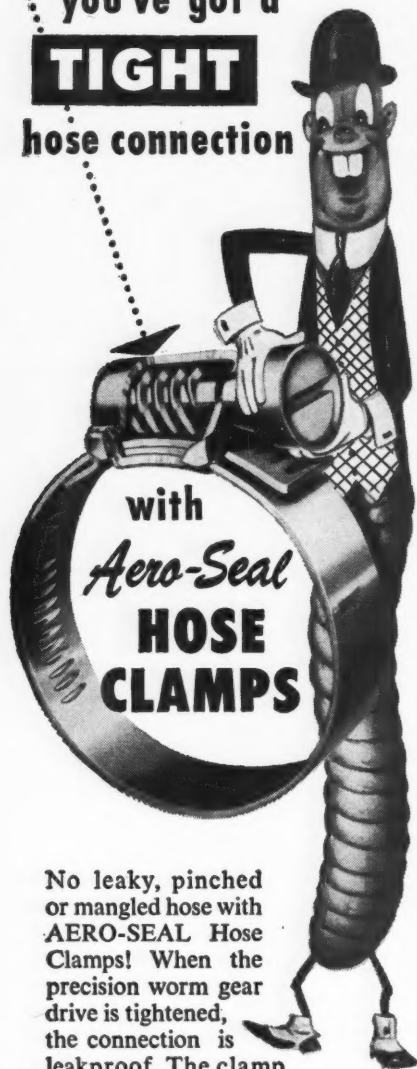


Member, Penna. Grade
Crude Oil Association



When *THIS* WORM TURNS

you've got a
TIGHT
hose connection



No leaky, pinched or mangled hose with AERO-SEAL Hose Clamps! When the precision worm gear drive is tightened, the connection is leakproof. The clamp won't come loose or snap open, even under severe vibration. AERO-SEALS are worth the slight difference, and the profit is good. Easy one-hand installation; removable for use again and again. Four sizes cover 90% of automotive needs. Stainless steel bands. Screwdriver or thumb-clamp type.

See your local jobber



Hudson . . .

Continued from Page 40

compression ratio of 7 to 1. With optional aluminum head, it has 143 hp, 7.5 to 1 compression ratio. Engine displacement is 262 cu. in.

The Wasp has a compression ratio of 7 to 1 with cast iron head and develops 126 hp. With optional aluminum head, compression ratio is 7.5 to 1, hp 129. Engine displacement is 232 cu. in.

Jet engines have a compression ratio of 7.5 to 1 with cast iron cylinder head, and 8 to 1 with optional aluminum head. Bore is 3 inches and stroke 4¾ inches. Displacement is 202 cu. in. The Jet engine develops from 104 to 114 hp, depending on choice of equipment.

Dual-Range Hydra-Matic Drive, when available, is optional equipment at extra cost for all 1954 jets.



"How does it feel to be champion of the world in Illinois, Ohio, New York, and New Jersey?"



Jack Donovan
Kansas City, Mo.
says . . .

IT'S YOUR BUSINESS

. . . or is it?

SEE PAGES 104-105

brand new-**UTICA**® No. 92

ADJUSTABLE WRENCH

that
Locks

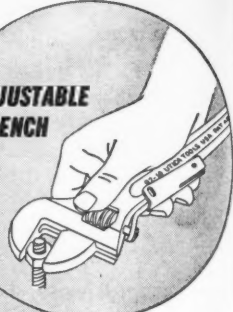


The UTICA® No. 92™ Locking Wrench can be used as an ordinary adjustable wrench. In addition, jaws can be locked at any desired setting—or can be made to clamp like a vise with over 100 lbs. pressure.

Here's a whole kit of tools in one wrench!

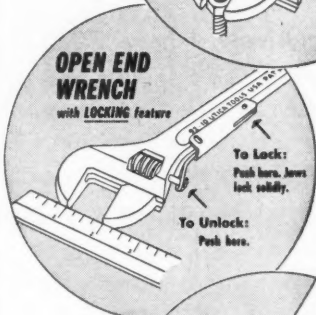
Three
Wrenches
in
One!

**ADJUSTABLE
WRENCH**

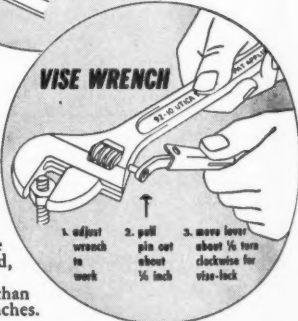


**OPEN END
WRENCH**

with LOCKING feature



VICE WRENCH



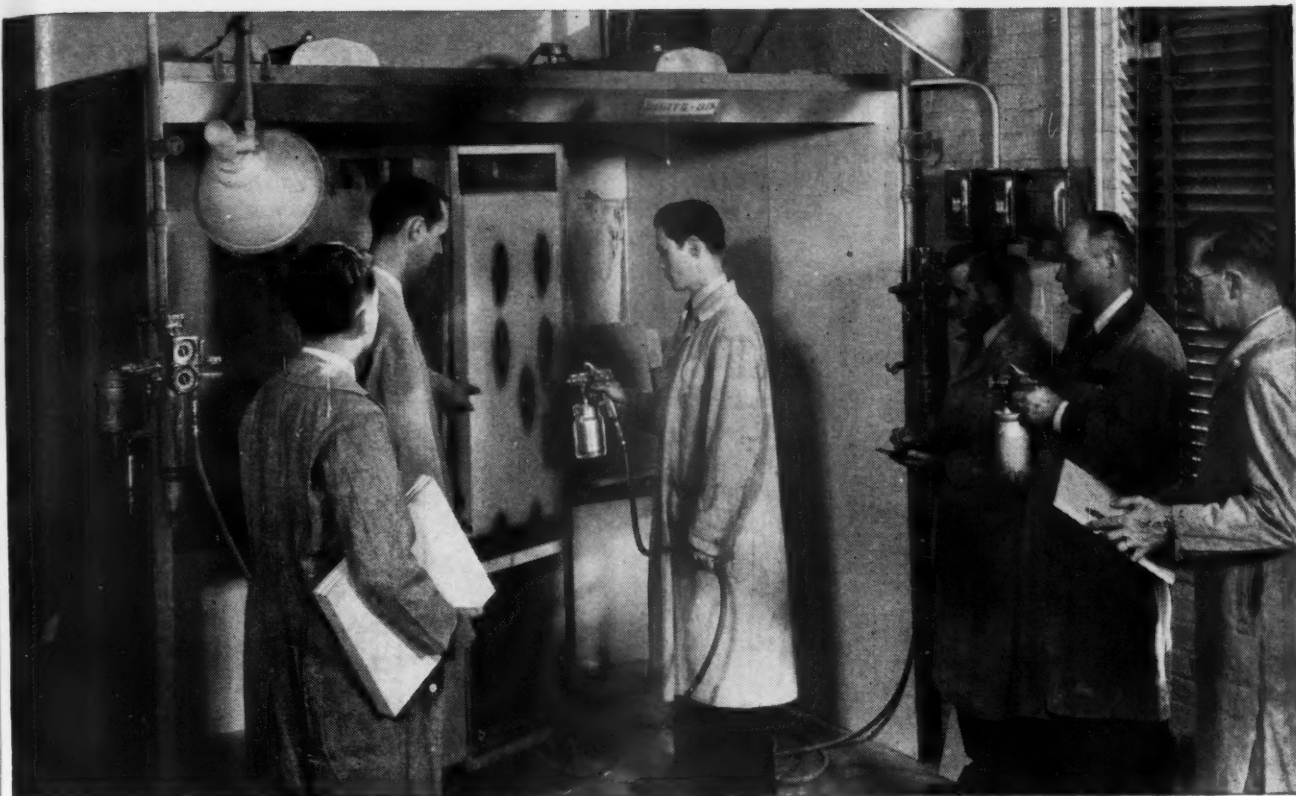
Built to out-last other wrenches! Forged of finest alloy steel. Jaws are extra hardened, last up to ten times longer than ordinary wrenches.

8", 10" AND 12" SIZES. SEE THEM AT YOUR DEALER'S.



IT PAYS TO BUY QUALITY TOOLS
and the world's best tools are made in U.S.A.

Chilton's MOTOR AGE, OCTOBER, 1953



At the tuition-free DeVilbiss School, painters and supervisors learn the latest spray methods and proper techniques.

Here's what we mean by:

"For better service, buy DeVILBISS"

Besides a complete line of precision-made spray-painting equipment, DeVilbiss offers you a host of services that help you get the most out of these products.

Consider the DeVilbiss School, for example. Located in Toledo, Ohio, it gives a big assist to both painter and employer by offering instruction without cost to new or experienced spray painters and their supervisors.

One-week courses are conducted throughout the year in all phases of refinishing maintenance and production painting. The latest techniques and newest methods are explained, discussed and practiced. Coating materials, surface preparation and maintenance of equipment are also carefully covered.

If you are in any way responsible for a painting operation, it will pay you to find out about

the many advantages of the DeVilbiss School. To make application or to obtain information and dates of the classes you're interested in, contact your local DeVilbiss jobber or our branch office. Or, write direct to the factory at Toledo, Ohio.

THE DEVILBISS COMPANY
Toledo, Ohio

Windsor, Ontario • London, England
Santa Clara, Calif.

For lower costs and higher profits, take advantage of these other DeVilbiss Services:

Rebuilt Exchange Service — Assures added life, prolonged efficiency to all users of DeVilbiss spray guns and compressors.

Training Films — Teach your employees the use and care of spray equipment.

Sales Promotion Aids — For automotive refinishers and contract painters to help them

sell their services in newspapers, magazines and direct mail.

Dependable Service — Local jobber stocks carried at all key points for quick delivery everywhere.

Research — DeVilbiss Research keeps pace with the coating needs of your industry and solves the problems of individual users.

FOR BETTER SERVICE, BUY

DEVILBISS

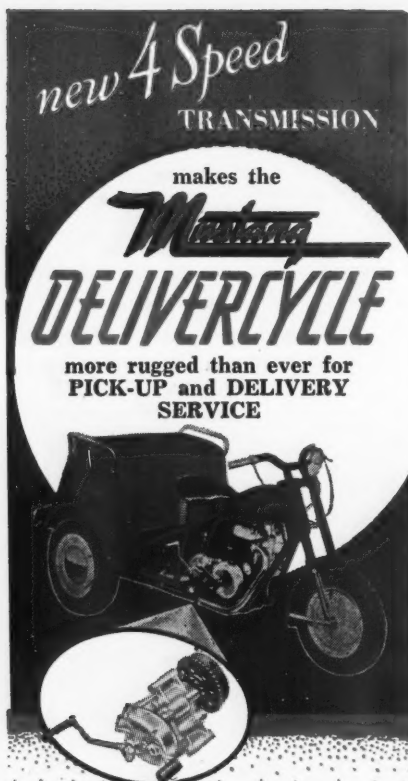


BRANCH OFFICES AND DISTRIBUTORS IN PRINCIPAL CITIES THROUGHOUT THE UNITED STATES, CANADA AND THE WORLD

new 4 Speed
TRANSMISSION

makes the
Mustang
DELIVERCYCLE

more rugged than ever for
PICK-UP and DELIVERY
SERVICE



MUSTANG DELIVERCYCLE'S new 4-speed Burman wide range ratio heavy duty transmission means greater load capacity plus longer life, trouble free performance. The Mustang DELIVERCYCLE offers low operating cost . . . minimum service and replacement . . . low initial investment . . . and most important of all, increased profit. Complete rider control minimizes possibility of accidents and the amazing accelerating power provides easy traffic maneuvering.

PERFORMANCE

MAXIMUM SPEED: 40-45 MPH
POWER OUTPUT: 9.5 H.P.
COMPRESSION RATIO: 6 to 1
GAS MILEAGE: 50 Miles per Gallon

EXCLUSIVE MUSTANG FEATURES

- ✓ load spring suspension
- ✓ shock absorbing telescopic front forks
- ✓ low center of weight for stability

ADJUSTABLE TOW BAR FOR AUTOMOBILE PICK-UP AND DELIVERY



Automobile Dealers
Service Stations
Garages

THE UTILITY OF A BIG MACHINE
AT HALF THE OPERATING COST

For full information on Mustang DELIVERCYCLE "penny-saving" features write

MUSTANG MOTORCYCLE CORP.
635 West Colorado Boulevard
Key: M A Dept. 105, Glendale 4, Calif.

Dynaflow . . .

Continued from Page 142

Worn band
Scored drum

When Car Will Not Move In Low Range

More common causes of reverse failure are as follows:

- *Reverse servo not working
- *Band improperly adjusted
- *Band operating strut has dropped out of place

Obsolete type band anchor has broken

Worn band
Scored drum

In any case where the low or reverse drum is scored and the band worn out, the transmission will slip badly, but there will be some movement.

Follow these steps carefully and bear in mind that most of the troubles encountered are stemmed from the basic troubles listed above.

Ford Instructors Train 100,000 in 3-Yr. Period

The Ford Division of the Ford Motor Company this fall will complete the training of the 100,000th dealer service man trained in the past three years by Ford factory service instructors all over the United States.

Simultaneously, Ford Division will open its new technical service laboratory—the first of its kind in the automotive industry. It will aid in the development of service tools, methods, procedures and publications and in improved customer relations.

To train the mechanics of its 6,400 dealers, Ford Division operates 33 permanent schools, one in each of its 33 district sales offices.

In addition to the direct training, Ford also makes available to its dealers sound slidefilm kits called the "Ford Service Forum." More than 4,200 Ford dealers use them each month. About 40,000 mechanics have received training in the 40 subjects covered in these kits.

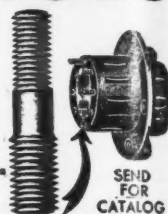
OVERSIZE AND STANDARD REAR WHEEL STUDS

for all Trucks

ORDER FROM YOUR JOBBER



CHAMP-ITEMS, Inc.
6191 Maple Ave.
St. Louis 14, Mo.



SEND FOR CATALOG



Charley Martin
New York, N. Y.
says . . .

IT'S YOUR BUSINESS

. . . or is it?

SEE PAGES 104-105



FEL-PRO
head gaskets

You can place your confidence in the same source of supply used by leading car factories and industrial and heavy-duty engine manufacturers.

FELT PRODUCTS MFG. CO.
1504-14 Carroll Ave., Chicago 7, Ill.

DON'T WORRY "MR. COCK"
I'VE GOT
SOUTHERN FIBER BLOCK



SOUTHERN
FRICTION MATERIALS CO. CHARLOTTE 1, N.C.

BUY BONDS

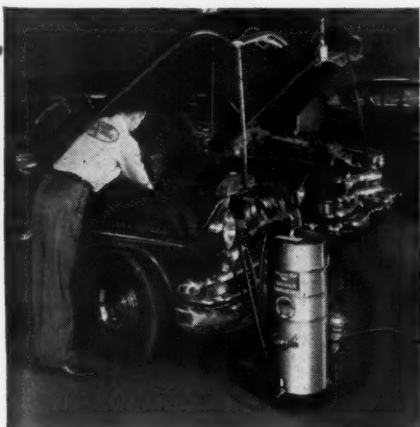
Satisfied Customers have made Carbon Blast Tune-up Service our biggest Profit-Producer

Lloyd MacIntosh, Service Mgr.
Wilson Pontiac-Cadillac
Birmingham, Michigan



"There are no better salesmen than satisfied customers, and that's why Carbon Blast Tune-Up Service has become the most profitable operation in our shop"... So says Lloyd MacIntosh, progressive service manager of Birmingham's Wilson Pontiac-Cadillac. And here's the rest of his story...

"The big time-saving feature sold us on the Carbon Blaster. We liked the idea of blast-cleaning combustion chambers instead of pulling the head and scraping the carbon out by hand. What's more, the service appealed to our customers, too. It's fast, it's low-in-cost and it gives them *positive* tune-up results... more pep, better, smoother performance, and up to 25% more power. So it's no wonder that word-of-mouth advertising alone has kept our Carbon Blaster profitably busy ever since we bought it almost a year ago."



Busiest Tune-up Department in Town.
"Busy? Right now we don't have enough space to handle any more tune-up business. That's why we're looking forward to moving into our new building where we'll have double our present capacity. Then, as soon as we get settled, we're going to put in another Carbon Blaster and we're going to promote the service for all it's worth... and, take it from me, it's worth plenty!"

Now Available to all Carbon Blaster owners! A complete, new "Profits" Promotional Program to help you sell Carbon Blast Tune-up Service to your customers!



KENT-MOORE ORGANIZATION, INC.

5-105 General Motors Bldg., Detroit 2, Michigan

ENGINEERS AND MANUFACTURERS OF SPECIAL AUTOMOTIVE SERVICE TOOLS AND EQUIPMENT

Chilton's MOTOR AGE, OCTOBER, 1953

KENT-MOORE ORGANIZATION, INC.

5-105 General Motors Bldg., Detroit 2, Mich.

- ☐ I am a "Head-On" Carbon Blaster owner. Please rush my copy of the "Profits" Plan Book immediately.
- ☐ I am not a "Head-On" Carbon Blaster owner. Please send complete details on this profit-producing machine.

NAME _____

ADDRESS _____

CITY _____

ZONE _____

WATER PUMP Variety

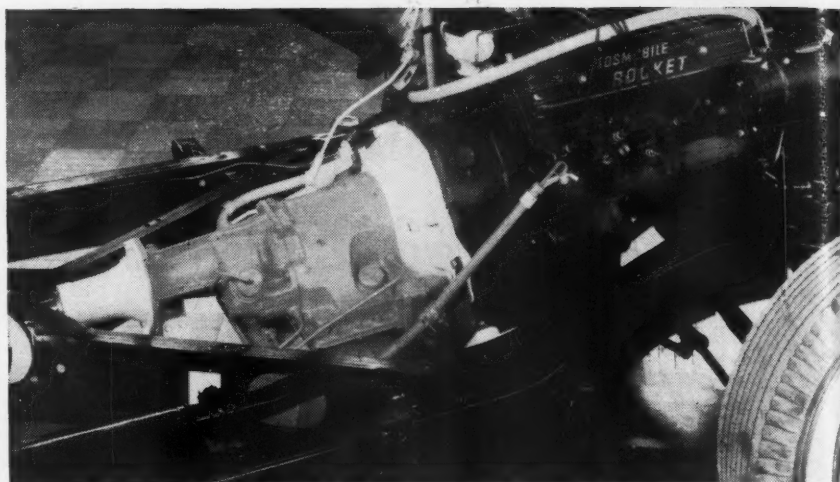
TO SERVE YOU, WHATEVER YOUR NEED

Wohler Corporation

LANSING 5
MICHIGAN



We Now Have a



One phase of "Operation Hydra-Matic" is the installation of the Dynaflow Twin Turbine torque converter transmission in the 1953 Oldsmobile and Cadillac. The Dynaflow, shown here on an Olds, is gray in the illustration. Painted white are the parts which had to be altered or added to meet the requirements of the Dynaflow installation. They include the rear flywheel housing, the rear bearing retainer extension, the propeller shaft, the cooling hoses for the transmission, the throttle linkage, the gear shift lever, rear motor mounting support brackets and transmission rear support bar assembly.

L-M Dealers Convene for Merchandising Conference

Twenty-six representatives from Lincoln-Mercury dealerships throughout the nation are attending the first session of the Merchandising Conference for dealer personnel. Three more groups will attend similar three-week conferences between now and Christmas.

Each conference consists of discussion meetings, informal lectures and related tours held during the full working day. While the major emphasis is on sales, other subjects are presented to explain their relationship to sales.

Candidates for the conference are selected from Lincoln-Mercury dealer personnel such as dealers, their sons, general managers, sales managers, department managers or heads, and leading salesmen.

Hudson Dealers to Gather Data on Parking Problems

Hudson dealers have formed a National Parking Study Council to help the American car owner to find a place to park. The National Automobile Dealers Association has urged all new car dealers to take the lead in helping to solve the nation's highway and parking problems.

Consultants and researchers have been given the task of gathering

information from communities which have successfully solved their municipal headaches. This material is being made available to government and business leaders, newspapers, radio and TV stations and others in positions of leadership in their communities.

Hudson dealers will serve as a broad national dragnet to gather data on parking activities of hundreds of areas. They will pass it on to the Council's offices.

Tubeless Tire Sales Show 90 Per Cent Market Gain

Facilities for the manufacture of tubeless tires will account for a substantial part of a \$22 million expansion program planned this year by B. F. Goodrich, it was revealed by Arthur Kelly, president of the company's tire and equipment division.

The company said that production is already more than double that of last year, and that more than two million tubeless tires have been put on the road since Goodrich introduced the first tubeless tires in 1947.

Last year, tubeless tires made the greatest sales gain of any tire in the replacement market, Kelly said. He pointed out that while unit sales of all makes of passenger car tires increased 34 per cent, tubeless tires gained 90 per cent.

8 reasons

why you can make
more money selling

Howard Zink
auto seat covers!



THE HOWARD ZINK CORPORATION

Fremont, Ohio

Passaic, N. J. • Long Beach, Calif. • Charleston, Miss.

THE ONLY SEAT COVER backed by full-scale national advertising.

EASIER TO SELL because national advertising helps pre-sell customers right in your market. Plenty of appealing colors and patterns to choose from; and year after year Howard Zink seat covers are the style leaders!

EASIER TO INSTALL because they're fashioned to fit perfectly.

A COMPLETE LINE—a style for every car, every prospect, every budget.

THIRTY-SIX YEARS OF EXPERIENCE and millions of Howard Zink seat covers prove Howard Zink superiority.

QUALITY TESTED—scientific, hidden-seam construction for longest life.

SEASONAL MERCHANDISING PLANS—traffic building promotions, point of sale helps and "how to sell" manuals and displays get you more customers...more profits!

FOUR CONVENIENTLY LOCATED FACTORIES coast-to-coast to serve you.

The best known, best liked, most asked for seat covers in the world!

★ ★ ★

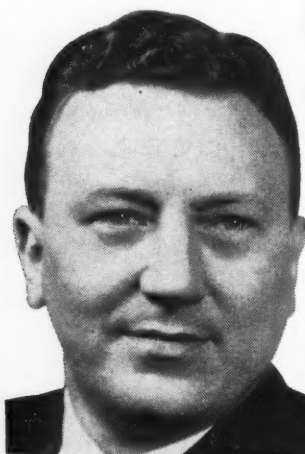
Find out how the new Howard Zink seat cover program offers dealers bigger things for '53.

Write today!



THE WORLD'S LARGEST MANUFACTURER OF FINE SEAT COVERS

why his service department handles D-X Motor Oils!



W. D. Howe, President of Key Auto Sales, Inc., outstanding DeSoto-Plymouth dealer of Terre Haute, Ind.



Let's let Mr. Howe speak for himself and for D-X. He writes us:

"We're very happy in handling D-X and D-X DHD Motor Oils at our DeSoto-Plymouth Agency.

"We find that these oils are very well accepted by the public. Because of the high quality of the motor oils, they have given our customers excellent results. This is particularly true in regard to cars with hydraulic valve lifters.

"In addition we realize a very nice profit from the resale of these products. Our sales hold up in our lubrication department, which we feel is partially due to D-X Products."

How about your motor oil sales? Are they, too, "holding up nicely" — or are they a disappointment? Could your service department net a larger profit with an oil that sold more changes? Certainly! — as Mr. Howe's experience shows.

Today, investigate D-X. If you live in the Midwest, write us now.



new, stepped-up

D-X

Motor Oil
with
Extrinol

MID-CONTINENT PETROLEUM CORPORATION

TULSA, OKLAHOMA Waterloo, Ia. Terre Haute, Ind.
Omaha, Nebr. Chicago, Ill. Minneapolis, Minn.

MOTOR AGE

Subscription

Renewal Percentage

Is Higher Than

That of Any Other

MONTHLY

AUTOMOTIVE

SERVICE

MAGAZINE

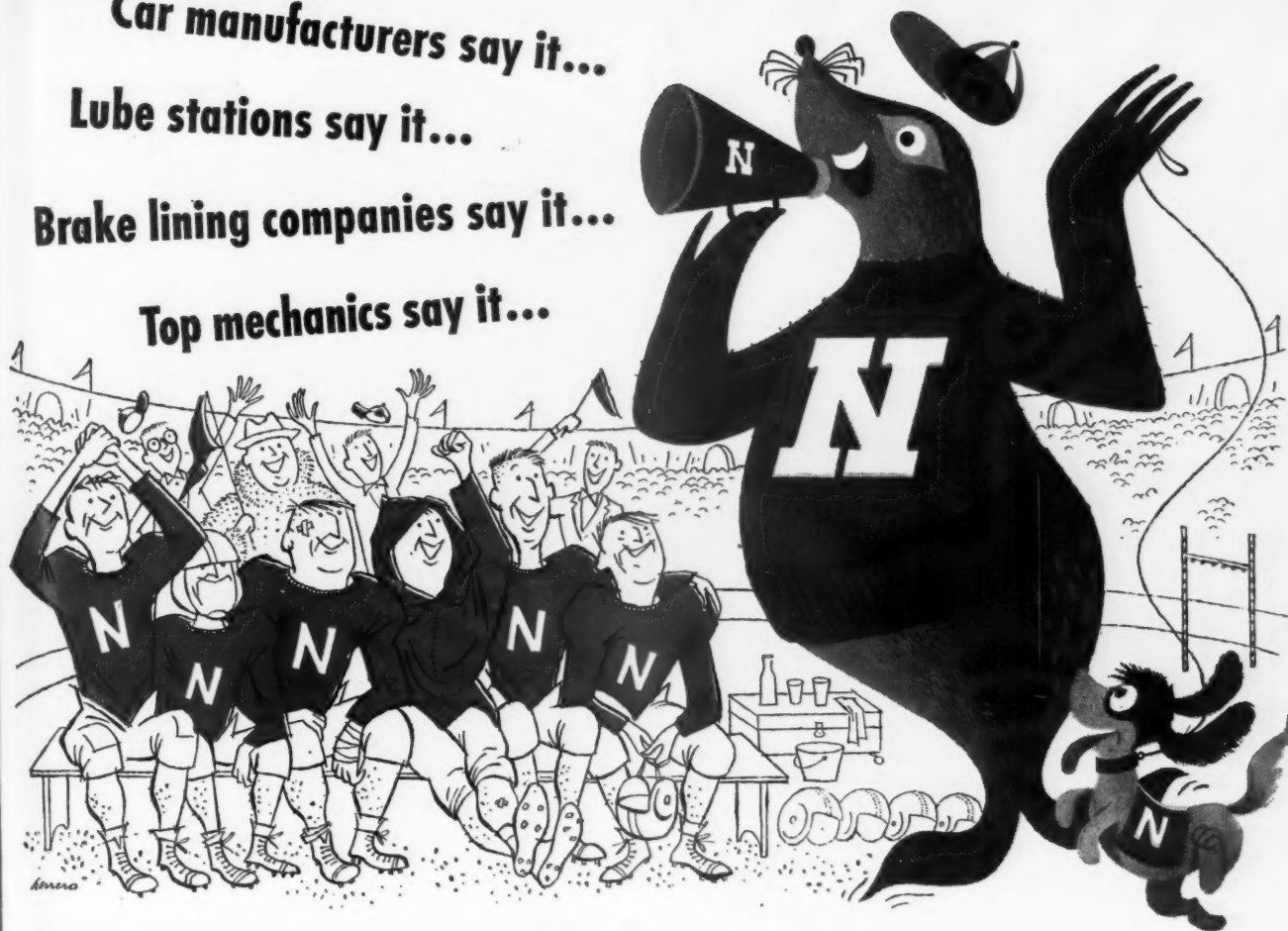


Car manufacturers say it...

Lube stations say it...

Brake lining companies say it...

Top mechanics say it...



**"Whenever you take out an oil seal,
always replace it with a new one..."**

Why lose time getting parts? National Service Stocks insure the right seals on hand, when, where needed. Jobber keeps stock up—no work for you. Cabinet comes with the deal. Ask your jobber for complete information.

Service stocks to fit your needs



#5512. For lube stations, 58 popular front wheel seals.



#5511. For garages, 114 fast-moving front, rear seals.



Support this industry wide program...

...and be sure the new seal is a National!

The easiest way to extra profit at no more work is installing new oil seals on repack, brake reline and overhaul jobs. Car manufacturers, brake lining companies, top mechanics all recommend it. And, the car owner appreciates the extra service when you explain how important new seals are. Do a professional job—the recommended way! Replace with new National seals every time old seals are removed!

NATIONAL MOTOR BEARING CO., INC.

General Offices: Redwood City, Calif. Plants: Redwood City, Calif.; Van Wert, Ohio

NATIONAL

**OIL & GREASE SEALS
O-RINGS SHIMS**

Approved original equipment for all cars, trucks, buses and tractors.



WHEEL WEIGHTS



"The Quality Line"

A TYPE and SIZE for EVERY APPLICATION
SEE YOUR JOBBER OR WRITE FOR CATALOG

TURNER Manufacturing Co.
KOKOMO, INDIANA, U.S.A.

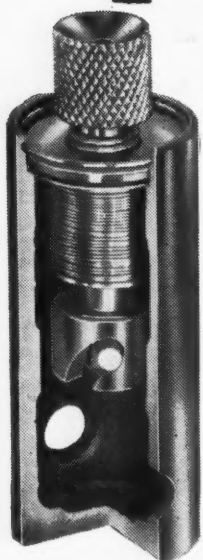


GET THE FACTS

POWER

BELONGS IN YOUR ENGINE

KEEP IT THERE!



AUTOMATIC MECHANICAL
Self-Adjusting
TAPPETS

- Maintain proper valve timing at all times, under all engine temperatures.
- Greatly increase your effective power.
- Reduce your gas costs, and provide the quietest engine operation.

These facts are proved by the records. Every claim is substantiated by positive proof. No matter what part of the auto industry you're in, you have nothing to lose and everything to gain by writing today for complete information to Dept. M-10.

SKINNER-MOSER SALES Dunedin, Florida



"Knock-Out" Valve Refacer

MODEL
K403



SEE YOUR
AUTHORIZED
K. O. LEE
DISTRIBUTOR
OR WRITE
FOR
COMPLETE
LITERATURE

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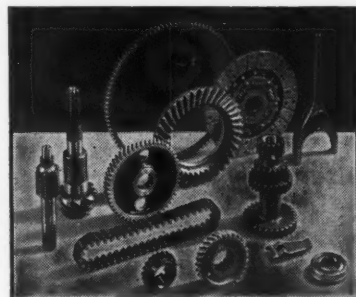


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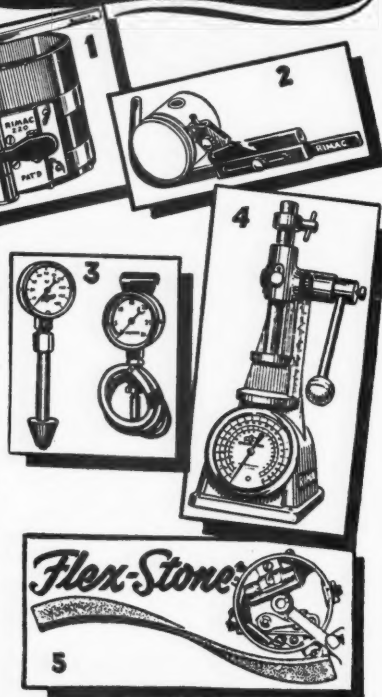


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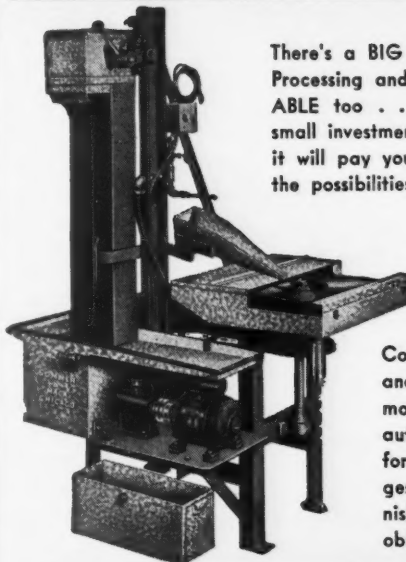
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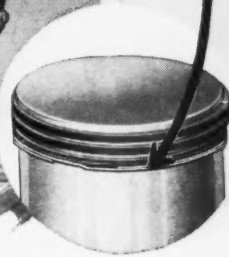
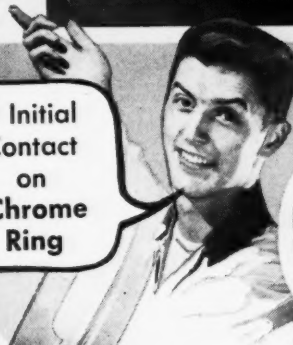
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